COTTON

SEPT. SERVING THE 1942

Textile Industries

TEXTILE SERVICE

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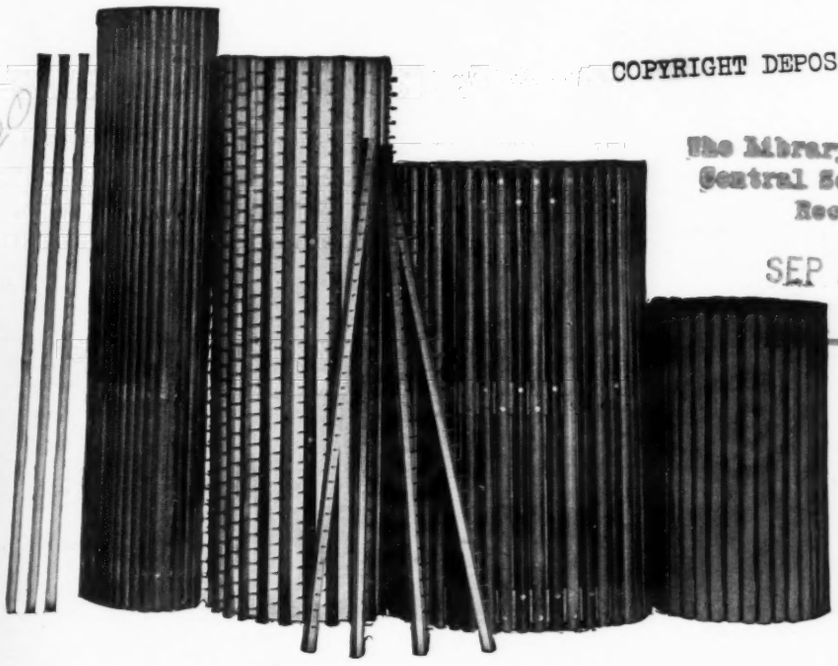


Beater Lags for Kirschner Beaters and Waste Machines

(Specify make of machine when ordering)

PICKER APRONS

Picker Aprons, as made by F. C. Todd, Inc., are of the finest materials, assembled by skilled workmen, assuring dependable day-in and day-out performance without expensive stops for adjustments and repairs.

These Aprons, because of their unequalled quality, are now standard equipment in textile mills throughout the country.

Available in both spiked and slat types for all makes of pickers, openers, breakers — waste machines and garnet machines

We also make aprons for all makes conditioning machines.

We Carry Parts for

PICKERS
CARDS
LAP MACHINES
COMBERS
DRAWING
SLUBBERS AND ROVING

SPINNING
TWISTING
WINDING
WARPING
SPOOLING
BOBBINS
SPOOLS
SKEWERS

Quality and Service Our Motto.

F. C. TODD, Pres. & Treas.

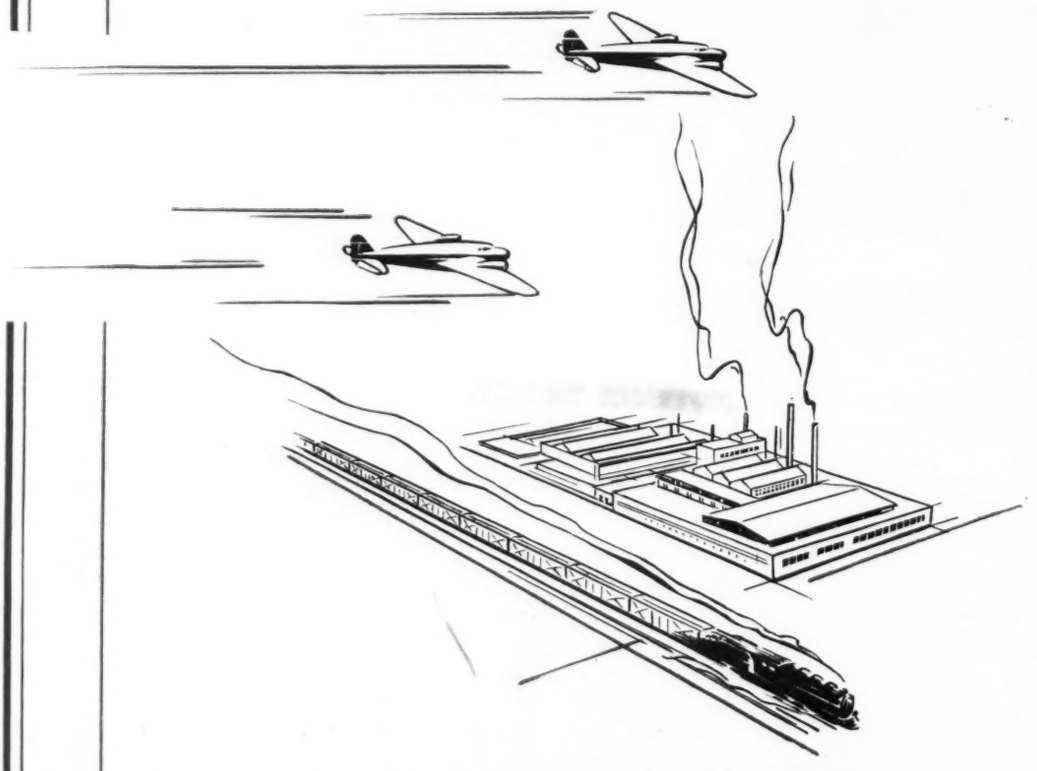
Liquidations *Appraisals*

F. C. TODD INCORPORATED

TEXTILE MACHINERY AND SUPPLIES

GASTONIA, N. C.

SEP 21 1942



Money, too... Must *WORK FASTER* these Days

American Industry is producing at the fastest rate in its history. To maintain the pace, the working capital of every manufacturer must work faster, too. Waiting for funds tied-up in accounts receivable slows down the activities of many companies, just as surely as waiting for materials.

Today it is possible to extend to customers your regular credit terms of 30, 60 or 90 days and yet receive cash as your goods are shipped. This modern and accepted service keeps your working capital liquid, permits you to turn it more often. At the same time, Commercial Factors relieves you of the costly burdens of credit investigation, collections, credit losses and bookkeeping expense.

Put *your* money on a faster work schedule! Write today for complete information about Commercial Factoring and what it can do for *your* business.

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828
Schefer, Schramm & Vogel Established 1838
Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK

Mechanics Don't Get Medals
But Theirs is a Victory Job

Wartime Program in

Draper Corporation Apprentice School

Hopedale Massachusetts

COTTON is published monthly by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga., U. S. A.
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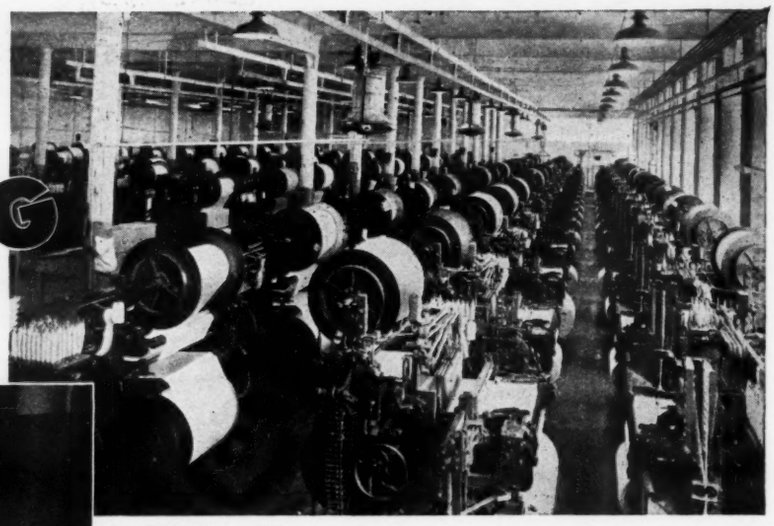
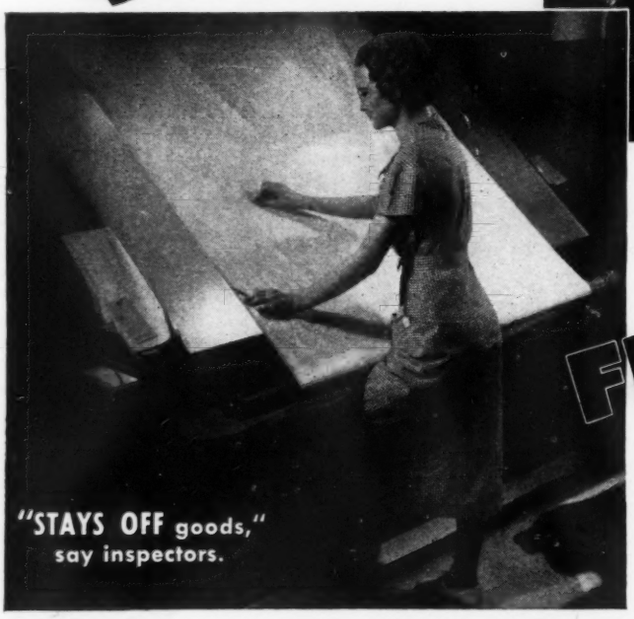
Volume 106. No. 9.

HIGH SPEED WEAVING



"STAYS ON loom parts," say maintenance men.



"STAYS OFF goods," say inspectors.

FEWER SPOTS

EVEN in the face of today's stepped-up loom speeds, you can reduce spoilage from oil-throw . . . when you use *Texaco Stazon.*

Texaco Stazon *stays on* fast-moving loom cranks, pick cams and other parts. Resists thinning out, creeping, splattering . . . assures lower cost lubrication, fewer "seconds," longer loom life.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by prominent mills in every textile area.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write to:

The Texas Company, 135 East 42nd Street, New York, N. Y.

Care for your Car ..for your Country

THEY PREFER TEXACO

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

★ More locomotives and cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

Tune in the TEXACO STAR THEATRE every Sunday night—CBS

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Caustic Soda, important in processing cotton for tire cord, is now being used to dissolve the cotton from the rubber in the process of reclaiming scrap. Thus Caustic Soda completes its cycle of usefulness to the Textile and the Rubber Industry, both of which are important consumers of Westvaco Chemicals.

In addition to Caustic Soda, other Westvaco Chemicals serving the Rubber Industry are Seawater Magnesia, Blanc Fixe, Sulphur Mono-Chloride and Chlorinated Solvents.

At this time, we particularly invite inquiries on Westvaco Caustic Soda from rubber processors and reclaimers.

Westvaco CHEMICALS

WESTVACO CHLORINE PRODUCTS CORPORATION

405 LEXINGTON AVENUE • NEW YORK, N. Y.

By the Hundreds

AMERICA'S LARGEST PLANTS

ADOPT G.T.M. INDUSTRIAL RUBBER CONSERVATION PLAN

Key executives acclaim Goodyear-developed procedure that can prolong life of rubber products as much as 50%. Get your plant started now. No charge.

With this 40-page manual, "Goodyear Industrial Rubber Products Conservation," your men have complete instructions for salvaging rubber products. It's furnished free—to designated operating men.

IN a few short weeks the Goodyear Rubber Products Conservation Plan has become American industry's first line of defense against the rubber shortage.

More than a thousand top operating men from major manufacturing companies have enthusiastically endorsed the plan, at meetings held, in fifty cities from coast to coast, by the G. T. M.—Goodyear Technical Man.

So impressed have they been by its rubber-saving possibilities, many asked the G.T.M. to come into their plants and explain the program in detail to the mechanical staffs. Upwards of 200 of these individual plant meetings have now been held, and many more are scheduled.

That is the verdict of industry on the Goodyear plan — a practical program for conserving your now almost irreplaceable rubber products and prolonging their life many extra months.

AVAILABLE TO ALL

The Goodyear conservation program consists of three simple, easy-to-follow steps:

"Goodyear Wages War on Waste"—a graphic, educational slide film which illustrates to your men, plainly and clearly, recommended conservation practices.

Practical plant demonstrations by the G.T.M. —what to look for, how to inspect and what measures to take to give hose, belts and other products longer life.

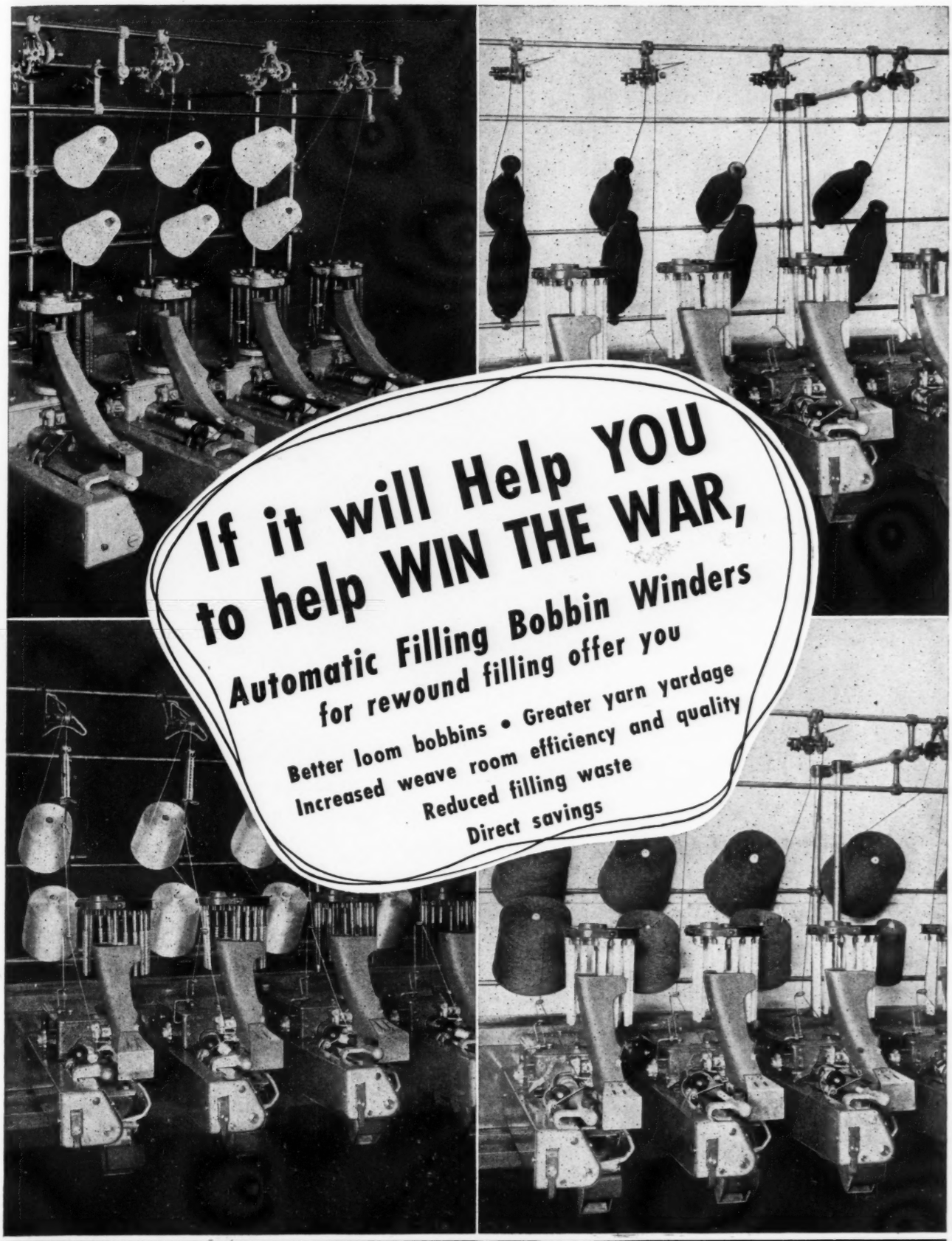
"Goodyear Industrial Rubber Products Conservation" manual—a fully illustrated 40-page book, telling exactly how to make repairs, and filled with suggestions for saving rubber — left with your operating men for their guidance.

HOW TO GET THE PROGRAM

To have the G.T.M. hold a rubber conservation meeting at your plant, simply write us today, and a definite date will be set. There is no charge for this service; it is not necessary that you be a Goodyear customer — it is all part of Goodyear's effort to help the nation save rubber. To arrange for your meeting, or obtain copy of the manual, write: Goodyear, Industrial Conservation Dept. E-3, Akron, Ohio.

THE GREATEST NAME IN RUBBER

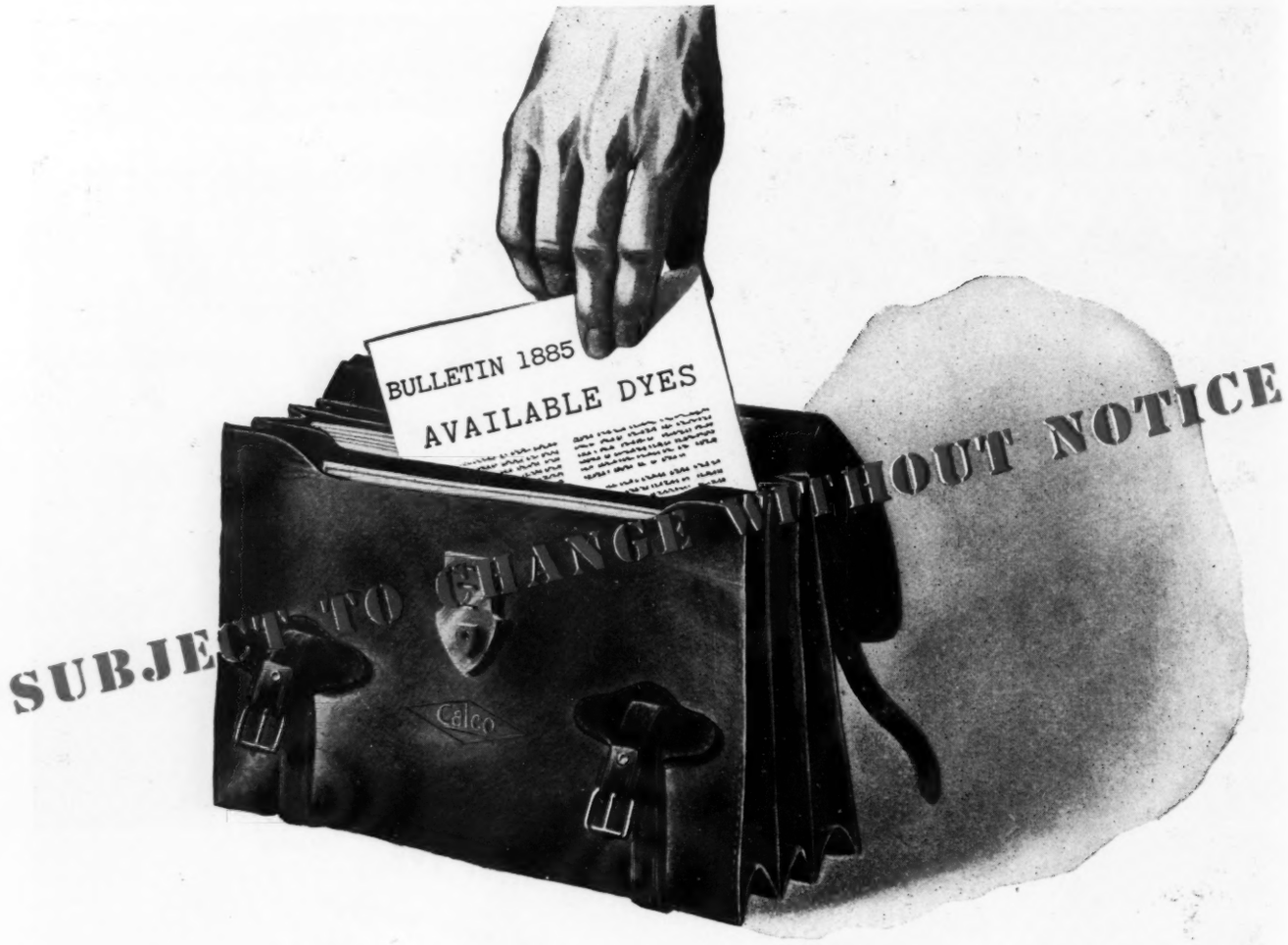
GOODYEAR
MECHANICAL GOODS


If it will Help YOU
to help WIN THE WAR,
Automatic Filling Bobbin Winders
for rewound filling offer you
Better loom bobbins • Greater yarn yardage
Increased weave room efficiency and quality
Reduced filling waste
Direct savings

WHITIN MACHINE WORKS

WHITINSVILLE, MASS., U. S. A.

CHARLOTTE, N. C. ATLANTA, GA.



Why it pays

to keep in touch with

your Calco Representative

There's no time to lose
There's just time to WIN
Calco

CALCO CHEMICAL DIVISION

AMERICAN CYANAMID COMPANY

Bound Brook, New Jersey

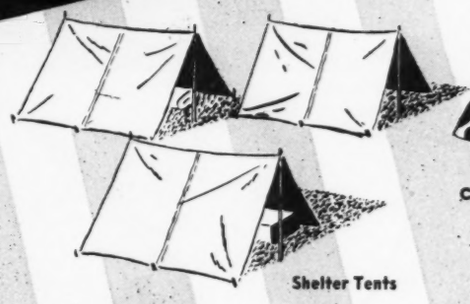
Boston · Philadelphia · Providence · New York · Charlotte · Chicago

Quite frankly, supplies of dyes and related chemicals are "subject to change without notice" these days. Changing demands for government requirements—re-alignments in priorities and allocations—variations in demand for civilian use affect the availability of scores of colors almost from week to week. Some can be furnished only on priority, but many, many others can be furnished in ample volume. Even among these, there is unavoidable uncertainty as colors which may be scarce today may be plentiful tomorrow—and vice versa.

A practical solution to this difficulty is to keep in touch with your Calco representative as you plan your production. He has a constant, up-to-date check on what colors are available—which require priorities—and the likelihood of replenishing supplies which are currently short. So keep in touch with your Calco representative by phone—or better still, ask him to call—you'll find him a worth-while member of your "ways and means" committee.

AHCOPEL WATER REPELLENT, MILDEW PROOF EMULSIONS FOR SINGLE BATH APPLICATION TO ALL TYPES OF FIBRES AND FABRICS *to meet U.S. Army Specifications!*

for Uniform Fabrics



Shelter Tents

Camouflage Fabrics

Army and Navy Webbing

Sleeping Bags

Parachute Cords

1 A Formula for every requirement where water repellent emulsions are used. **2** Make fabrics water repellent and stain and spot resistant. . . **3** Mildew resistant emulsions to meet Government specifications. **4** Retain porosity of fabrics. **5** Easily and economically applied in quetch, padder, jig or beck.

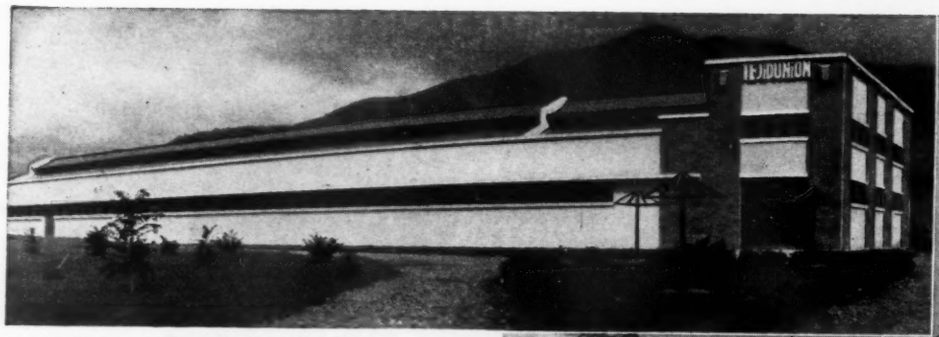
Ahcopel is NOT a "war baby". It was one of the first water repellents developed in this country. Our long experience in the water repellent field is one reason why Ahcopel has already been used for many millions of yards of military as well as civilian fabrics.

SAMPLES ON REQUEST

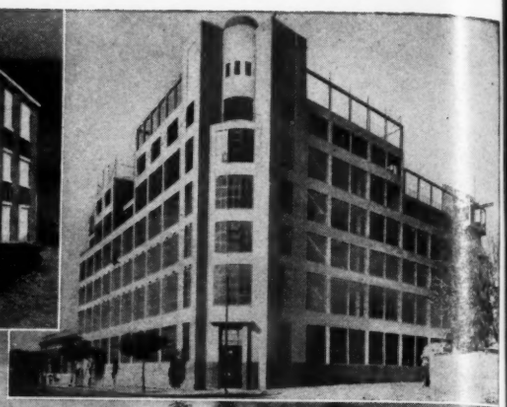
ARNOLD-HOFFMAN & COMPANY, INC.

Established 1815 **PROVIDENCE, RHODE ISLAND** Plant at Dighton, Mass.

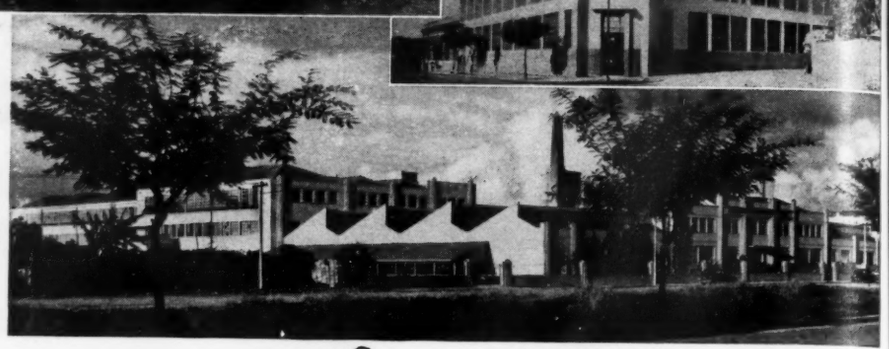
NEW YORK ★ BOSTON ★ PHILADELPHIA ★ CHARLOTTE



Cia de Tejidos Union, Medellin, Colombia



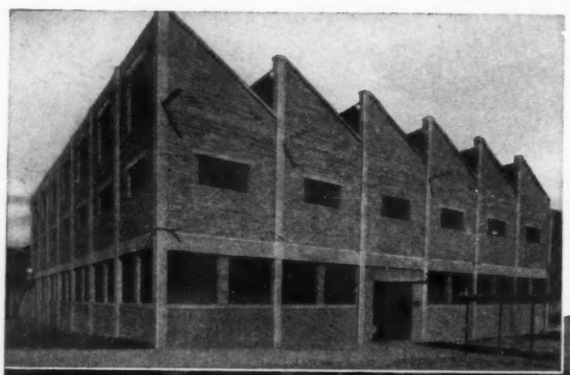
(Top Right) Manufactura Algodonera Argentina, S. A.
Buenos Aires, Argentina

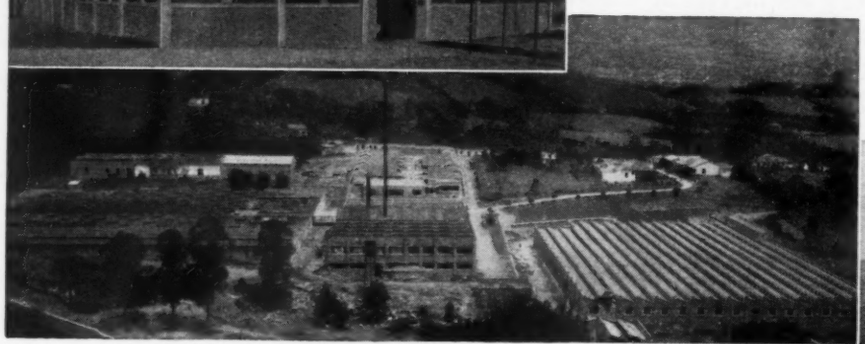


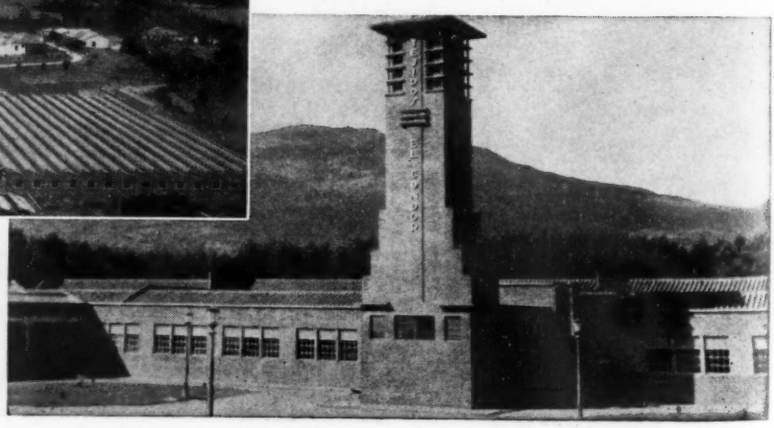
Johnson & Johnson do Brasil
Sao Paulo, Brazil

Saco-Lowell

"A STANDARD





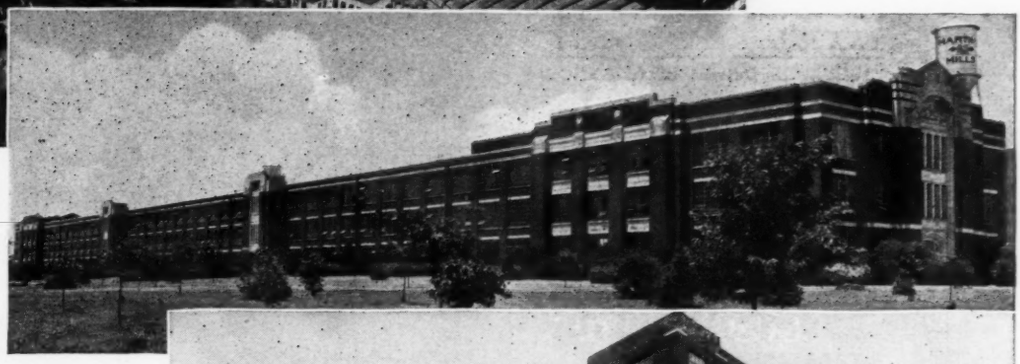


(Top) Fabrica de Hailados y Tejidos del Hato, Medellin, Colombia

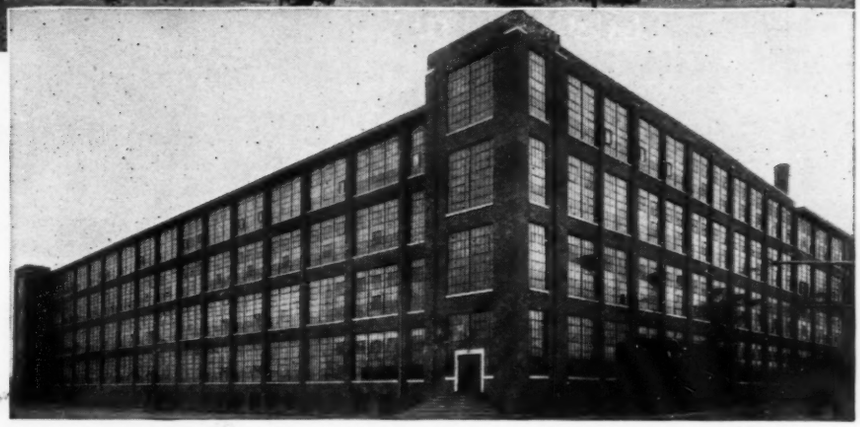
(Center) Cia de Tejidos de Rosellon, S. A., Medellin, Colombia

(Right) Tejidos El Condor, Medellin, Colombia

Bibb Manufacturing Co.
Columbus, Georgia



Martha Mills . . . Thomaston, Georgia
(Division of the B. F. Goodrich Co.)



Mathews Cotton Mill
Greenwood, South Carolina

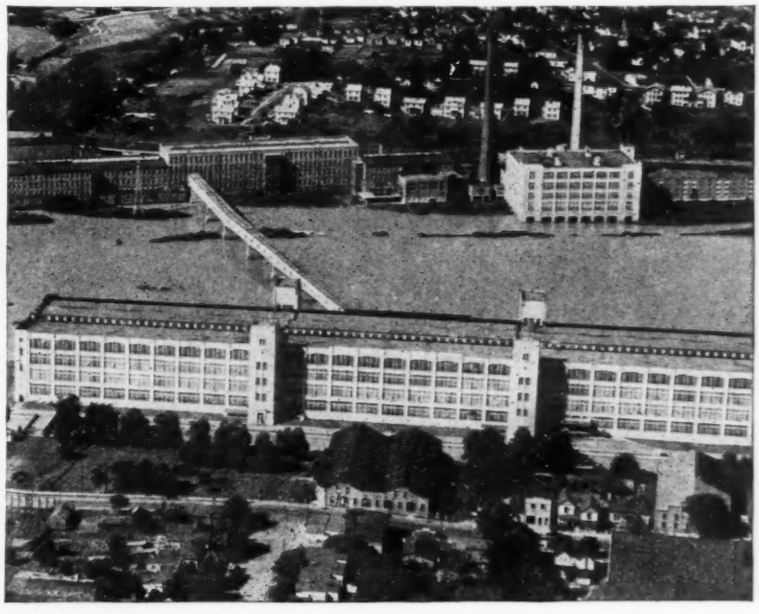
OF QUALITY ON TWO CONTINENTS

In both North and South America and throughout the rest of the world Saco-Lowell equipment has long been recognized for its dependable, efficient and consistent performance.

It is significant that many of the finest textile mills are often referred to as "a Saco-Lowell mill." In these plants maintenance and operation are not major problems, thus leaving management free to devote its executive talents to quality building and profit making.

In the highly competitive post-war period, problems of management will be simplified if efficient, dependable equipment is in operation. Although new equipment cannot be delivered at this time, our engineering organization is ready to assist you in planning a comprehensive post-war program.

Riverside & Dan River Mills *(Riverside Division)* Danville, Virginia



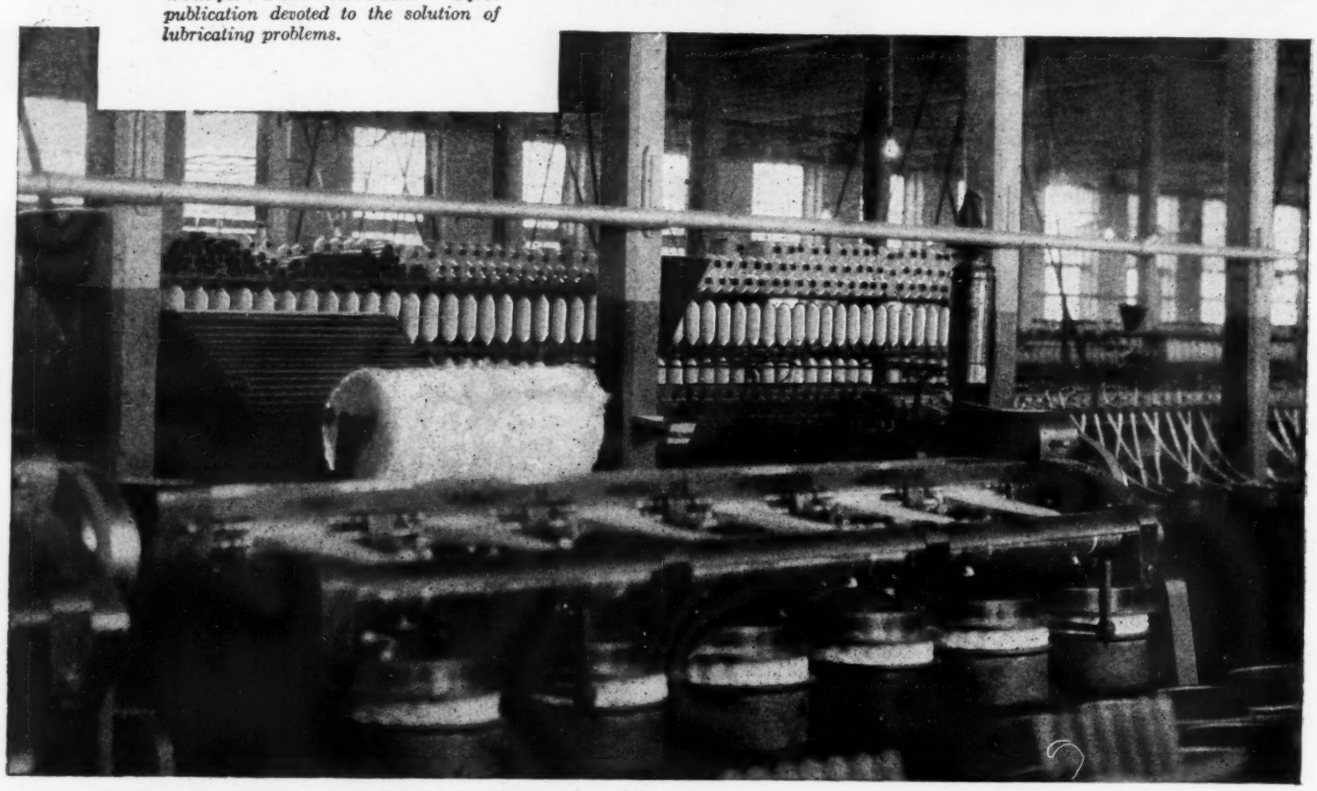
Saco-Lowell Shops

60 BATTERYMARCH STREET, BOSTON, MASSACHUSETTS . . . Charlotte, N. C., Greenville, S. C., Atlanta, Ga.

FRONT LINE MIGHT rests on rear line production. *TEXTILE MACHINERY* maintains peak performance for longer service hours when lubricated with . . .

. . . SINCLAIR LILY WHITE OILS. These oils reduce drag and temperature in high speed operation. Sinclair also offers quality oils for *Knitting Machinery.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

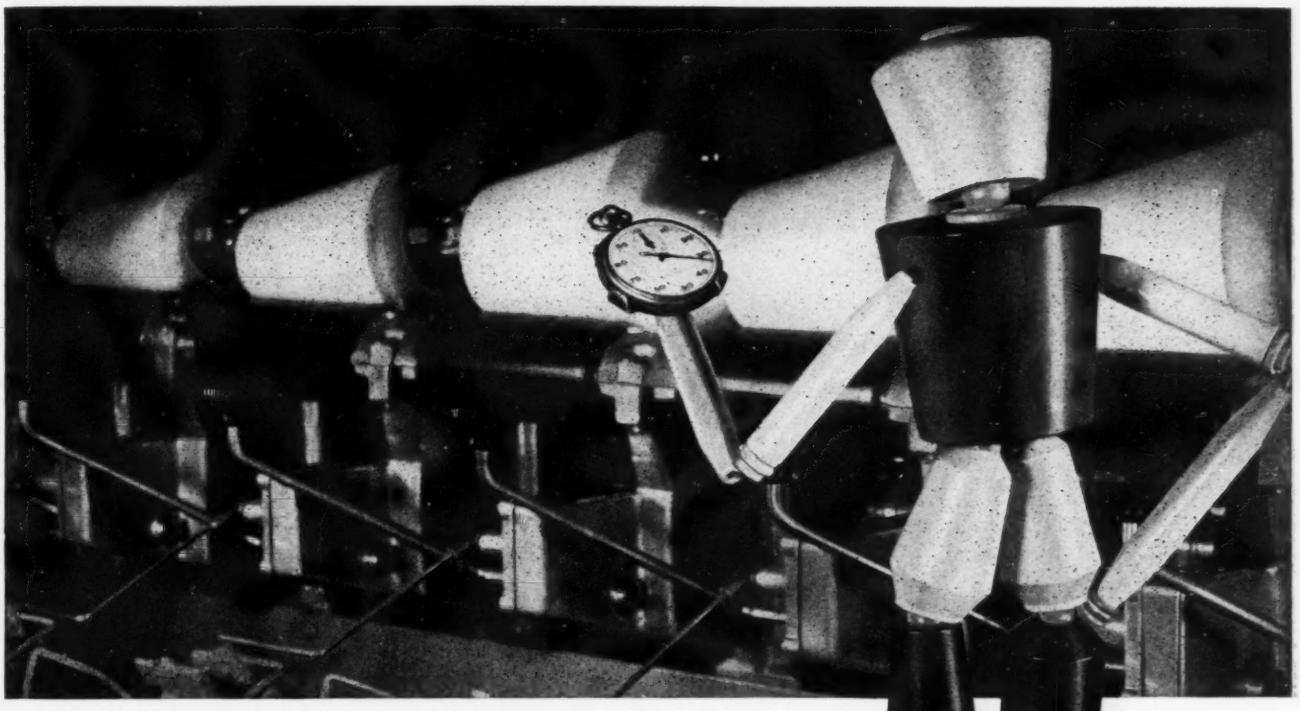


SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg., Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth



To determine yard speed, wind for two minutes, break the yarn, reel it to measure yardage in a two-minute run. Use a half-full cone.

THE ROTO-CONER*...

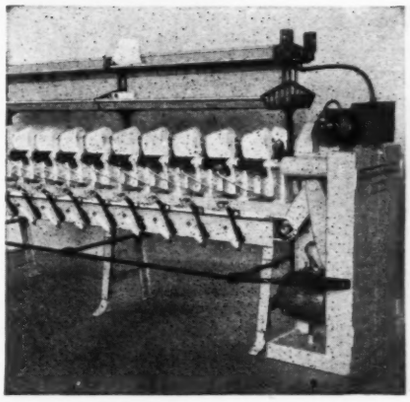
the low-investment, high-production winder

The Roto-Coner is the high-speed winder,* limited only by the winding qualities of the yarn. Cones of cotton knitting yarn are produced at 550 yards per minute . . . dyeing packages, and tubes of sales yarn at 450 y. p. m....wood cones at 750 y.p.m.

Higher speed means fewer spindles. Due to these high speeds, it is possible to get required production with fewer spindles. This saves initial investment, floor space and power.

Maximum production — continuously. Both coarse and fine counts can be wound at the same high speed. The standard rotating traverse produces quality packages of all sizes of yarn at this high speed and with a minimum number of winds.

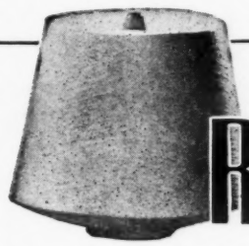
Lowest expense for maintenance and repair. The Roto-Coner's* modern design means trouble-free operation, and the small number of parts reduces maintenance and repair. Despite higher winding speeds, there are no fast-moving parts to be greased, cleaned or frequently replaced. Oiling of all moving parts is entirely automatic.



This modern, high speed machine may be equipped for paper coning or tubing, wood coning or for dye packages.

See our catalog in TEXTILE YEARBOOK

*Reg. U. S. Pat. Off.



ROTO-CONER

LEESONA

Reg. U. S. Pat. Off.

OPEN-WIND CONES FOR KNITTING

DYEING PACKAGES — PARALLEL TUBES FOR TWISTING

UNIVERSAL WINDING COMPANY P. O. BOX 1605 **PROVIDENCE, R. I.**

BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

It will open . . . *of course!*

Because it has been folded properly. Because it has been made with care. Because it has been inspected with even greater care.

And because it has been stored in a special air conditioned room—with exact temperature and humidity control—to protect the silk fabric against mildew or other climatic damage.

Ordinary air conditioning . . . the kind of air conditioning you've known in the past . . . wouldn't do for a job like this. *More precise* . . . and *more flexible* equipment . . . the air conditioning of the future . . . had to be developed.

General Electric has been specializing in meeting the difficult air conditioning problems created by America's war effort. Air conditioning to preserve materials . . . to improve the operation of machinery . . . to make it easier for men to work better!

When final Victory is won, many valuable lessons learned in fighting the Battle of Production will be turned to the uses of peace.

More people will be able to enjoy air conditioning in homes, offices and other places . . . because it will be less expensive, more compact. And it will be vastly improved air conditioning . . . with accurate control of *humidity* as well as temperature. *Required climates* will be reproduced at will.

When the time comes to supply the air conditioning needs of the post-war world, General Electric will be ready. General Electric Co., Air Conditioning and Commercial Refrigeration Department, Bloomfield, N.J.

Air Conditioning by

GENERAL ELECTRIC

A control laboratory at a Cyanamid plant producing chemicals for textile industry.

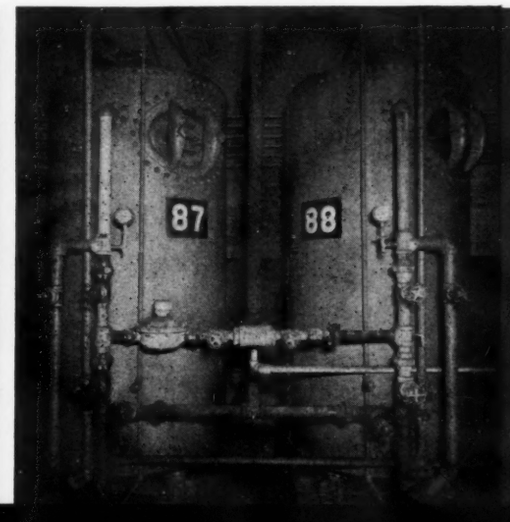
CYANAMID CONTROL MAINTAINS UNIFORM QUALITY PRODUCTION OF CHEMICALS FOR THE TEXTILE INDUSTRY

At Cyanamid, CONTROL is much more than routine check-up during the manufacture of a chemical. While checking up in this way is, of course, vitally important to exercising the proper control for uniform high quality in a product . . . it is only part of the job. To gain the complete picture of the extent of Cyanamid control, it is necessary to go back to the raw materials from which Cyanamid chemicals are to be made. These, as well as the finished product, to be acceptable, are tested in the laboratory against high quality standards. Purification and conditioning of water supply . . . modernization of production equipment and methods . . . even the nature of packing and storage facilities are also carefully integrated parts of the broad system of accurate, dependable control of chemical production at Cyanamid.

This multiple control from raw material to finished product holds for Cyanamid's most commonplace, simply compounded types of chemicals as well as the more complex, delicately balanced compounds. This fact verifies the wisdom of relying upon one carefully controlled source of supply for *all* chemicals . . . sulphonated oils, penetrants, softeners, finishes, sizing compounds, wetting agents or other staples and specialties for uniform quality and economical textile processing.

Each step in chemical production at Cyanamid is automatically recorded by sensitive gauges for accurate check-up.

Water is essential to most chemical producing processes. Here is one of the large-capacity water purification units installed in a Cyanamid textile chemical producing plant.



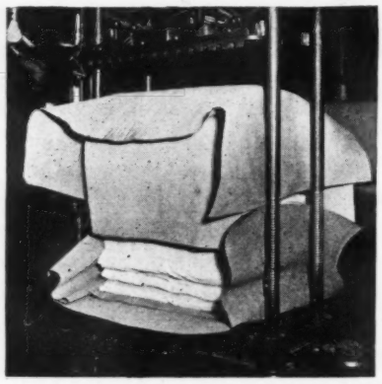
SULPHONATED OILS; PENETRANTS; SOFTENERS; FINISHES; SIZING COMPOUNDS; DECERESOL* WETTING AGENTS

*REG. U. S. PAT. OFF.

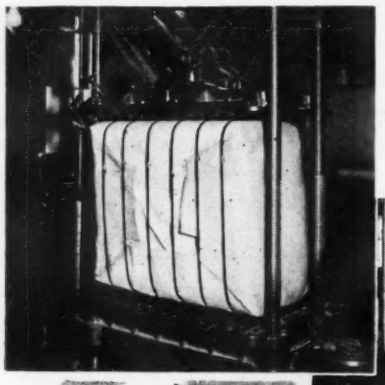
AMERICAN CYANAMID & CHEMICAL CORPORATION

A UNIT OF AMERICAN CYANAMID COMPANY
30 ROCKEFELLER PLAZA • NEW YORK, N. Y.
DISTRICT OFFICES: 99 Broad Street, Boston, Mass.; 401 N. Broad Street, Philadelphia, Pa.; Russell & Hazard Sts., Baltimore, Md.; 2913 Wilkinson Blvd., Charlotte, N. C.; 850 Leader Bldg., Cleveland, Ohio; 30 N. Wacker Drive, Chicago, Ill.; Miller Road, Kalamazoo, Mich.; 931 Fisher Bldg., Detroit, Mich.; 705 Olive Street Building, St. Louis, Mo.; Azusa, Calif.

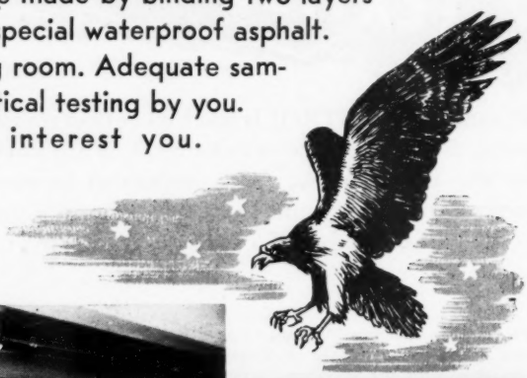
Protect with Fulton Waterproof BALING PAPERS



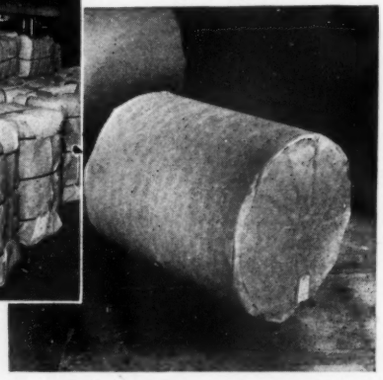
Protect your cotton bales, rolls and bundles against moisture and dust. Cotton mills, knowing the importance of weaving every pound of cotton for winning the war and putting all available production into wartime uses, have turned to the new FULTON Baling Papers which furnish the best replacement for burlap and other textile bale coverings. These papers are waterproof and dustproof, a feature not possible in other type wrappings. They are better and they cost less. Supplied in convenient size rolls and available for prompt shipment.



CRINKLE DUPLEX Paper for wrapping bales and FLAT DUPLEX for wrapping rolls are made by binding two layers of quality kraft paper with a special waterproof asphalt. Easy to handle in any shipping room. Adequate samples gladly furnished for practical testing by you. FULTON low prices will interest you.



Write our nearest plant.



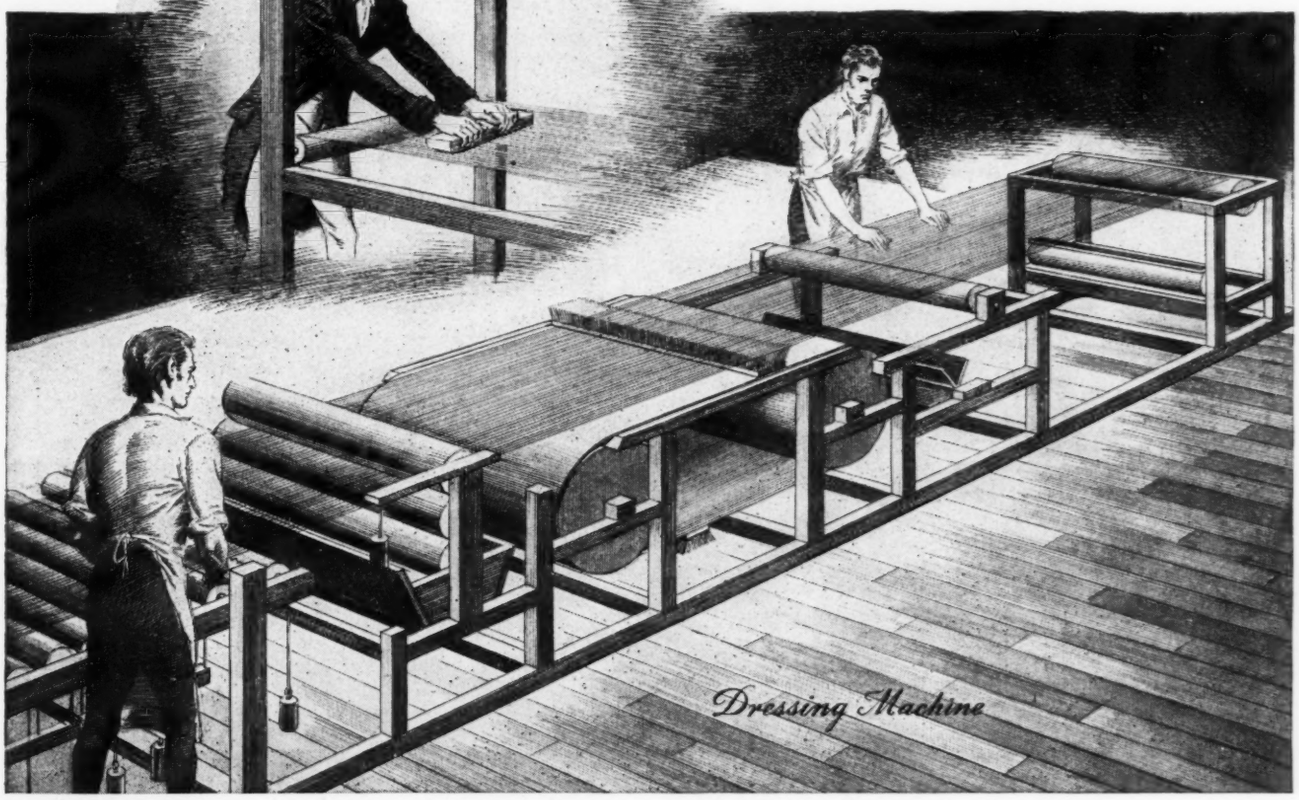
Fulton Bag & Cotton Mills

Manufacturers Since 1870

ATLANTA ST. LOUIS DALLAS NEW ORLEANS
MINNEAPOLIS KANSAS CITY, KAN. NEW YORK

Warps Used to Stop to Get Dressed

When the Power Loom was first invented, its great efficiency could not be fully exploited, for it was still necessary to stop the loom frequently in order to follow the old procedure of rubbing large cakes of tallow on the yarn—to "dress" the warp.



Dressing Machine

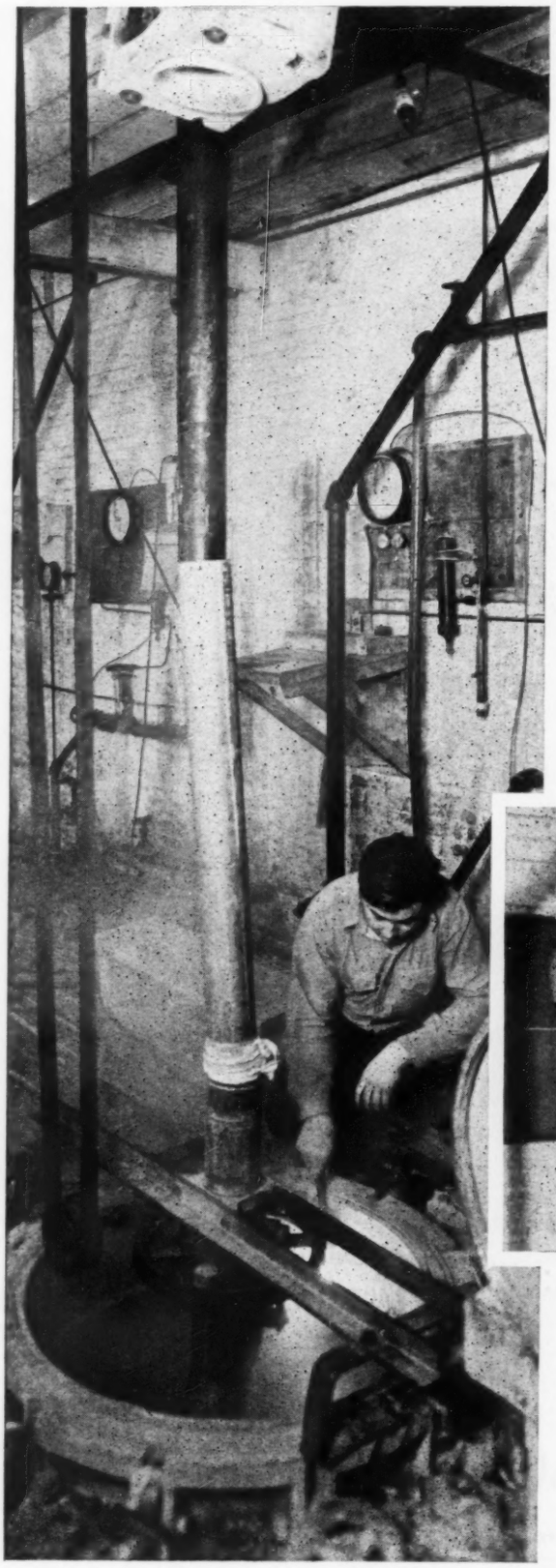
WITH textile progress making such rapid strides, it was inevitable that some inventive genius would develop a machine to "dress" (slash) yarn in a more efficient and uniform manner. In 1803 it came. Radcliffe and Ross, who had experimented for more than two years, finally patented the first dressing machine and utilized *continuous* movement to achieve their purpose. At last, yarn could be dressed before being wound on the loom beam. The yarn was passed through a hot dressing of starch, compressed between two rollers, and was then dried over a succession of cylinders all in one *continuous* operation.

Essentially, all textile progress depends upon the same fundamental—the introduction of *continuous* movement. Industrial's engineers decided it was time to put it to work in rayon manufacture when they saw the delays and lack of uniformity control in the start—stop, multi-handling operations of conventional viscose rayon production. Their research led to the "Continuous Process" by which SPUN-LO yarn is spun, washed, bleached, treated, dried and twisted in *continuous* operations as a single thread. The resulting yarn is more efficiently produced, is more uniform in strength, lustre and denier, and is virtually free of knots and broken filaments.

"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio—New York Office, 500 Fifth Avenue

Plants that COUNT COSTS BY THE CALENDAR *Select Foxboro!*

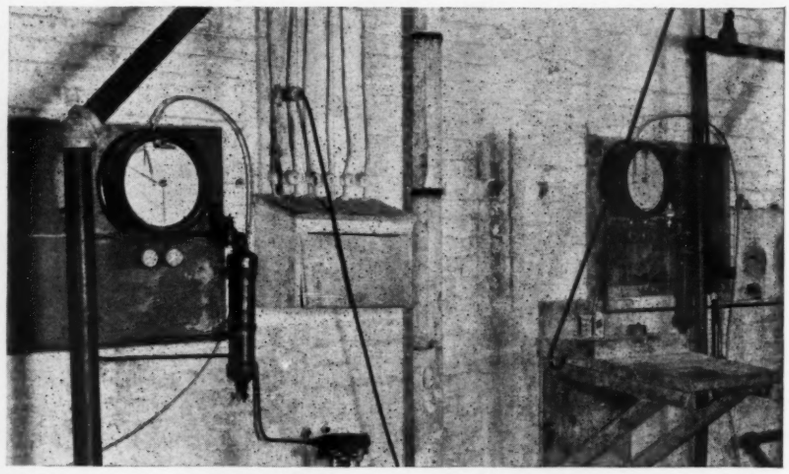


NO matter *how well* any controlling, recording or indicating instrument does its job . . . its real value depends on *how long* it will give precision performance without interruptions. Textile men who have compared various instruments in service testify that they get *more years of sustained accuracy* when they select Foxboro! Fifteen to twenty years of continuous operation is not unusual.

Here is just one of many examples. In the bleaching house pictured, one Foxboro Temperature Controller has given continuous, accurate control for over ten years. Because of this cost-cutting dependability, Foxboro was again specified when an additional control unit was installed three years ago.

Kier operation is most efficient under definite controlled temperatures. Kiers can be operated at maximum production without wasting peroxide. In addition, each bleach is uniform . . . whites are brighter . . . colors are matched quicker in the dye house and are more uniform.

Write for details on Foxboro Instrumentation for bleaching or any other textile process. **The Foxboro Company, 18 Neponset Ave., Foxboro, Mass., U. S. A.** Branches in principal cities of U. S. and Canada.

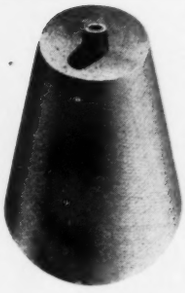


Re-order indicates Foxboro dependability. Kier Controller (left) has served 10 years. Second Foxboro unit (right) added 3 years ago.

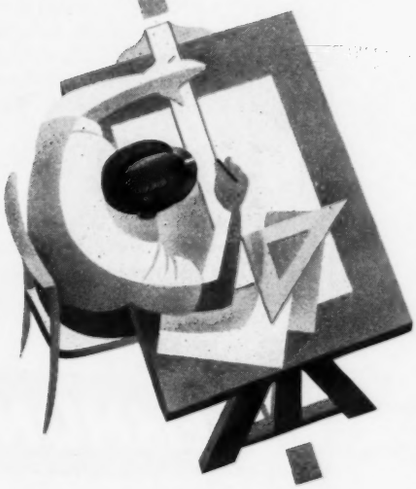
FOXBORO
REG. U. S. PAT. OFF.
Instrumentation

BUY U. S. WAR BONDS — *REGULARLY* EVERY PAY DAY

THE LOUIS ALLIS CO., MILWAUKEE, WIS.



How To Get To Market... FAST...YET SAFE!



WITH time and shipping space both at a premium these crowded, fast-moving days, shipments of all kinds *must* be stripped for action. Yet they *must* be adequately protected against today's increased shipping hazards.

For many products that means—redesign the shipping containers in tough, sturdy, light-weight, space-saving corrugated fibreboard.

And that means—see Gaylord!

Whatever your shipping problems, whatever types of shipping containers you are now using, Gaylord's experienced shipping consultants and practical, creative designers are at your service.

Why not call your nearest Gaylord office? Today? There is no shortage of corrugated fibreboard. You'll get action *—NOW!*

Gaylord Boxes

GAYLORD CONTAINER CORPORATION

General Offices: SAINT LOUIS

New York • Chicago • San Francisco • Atlanta • New Orleans
Jersey City • Seattle • Indianapolis • Houston • Los Angeles
Oakland • Minneapolis • Dallas • Jacksonville • Columbus
Fort Worth • Detroit • Tampa • Cincinnati • Des Moines
Oklahoma City • Portland • Greenville • San Antonio • Memphis
Kansas City • Milwaukee • Bogalusa • Weslaco • Greensboro

ALSO GAYLORD FOLDING CARTONS...GROCERY BAGS AND SACKS...KRAFT AND SPECIALTIES

Chases Trouble . . . Protects Quality

Toughness and *smoothness* are the characteristics of Emmons "Certified" steel heddles that make them your best buy.

The "warp pests" that interfere with production and quality — chafed spots, rust marks, cut yarn — keep out of sight when Emmons heddles "police" your weaving. Moreover, high tensile strength and corrosion-resistant plating give you longer heddle life, fewer replacements.

Careful plant inspection and periodic tests by an outside laboratory double-check these qualities. Write "Emmons" on you next order for steel heddles and get the *smooth strength* that guards as well as guides your yarn.

Be Certain — Buy Certified

EMMONS LOOM HARNESS COMPANY
Lawrence, Massachusetts . . . . Charlotte, North Carolina

HERE'S HIGH-SPEED STAMINA FOR YOU

Look for the black EMMONITE metal finish on the ends of Emmons Heddle Frames. This new Phytanium-blended *protective penetrant* smooths out inequalities in the grain of metal parts, fights rust and wear. EMMONITE, *not* a surface coating, will not break, peel or rub off.

There's *long life* too, and *better weaving* in the extra number of rolled rivets in Emmons Heddle Frames, which prevent buckling even at highest speeds, and in their hand-picked, knotless lumber, doubly shellacked.

EMMONS

WORKS TO OLD AGE — BUT STILL RESILIENT

There's all the resilience of youth in Emmons reeds, without sacrificing the rigidity that makes for long life. Each dent — uniform to .001" and spaced to .01" — is resilient enough to let good knots, slubs and nits pass through; dents instantly spring back into position, without the spreading that causes reed marks in the cloth.

"Does it deserve this seal?" Careful inspection is required before it is placed on every shipment of Emmons products.

EMMONS

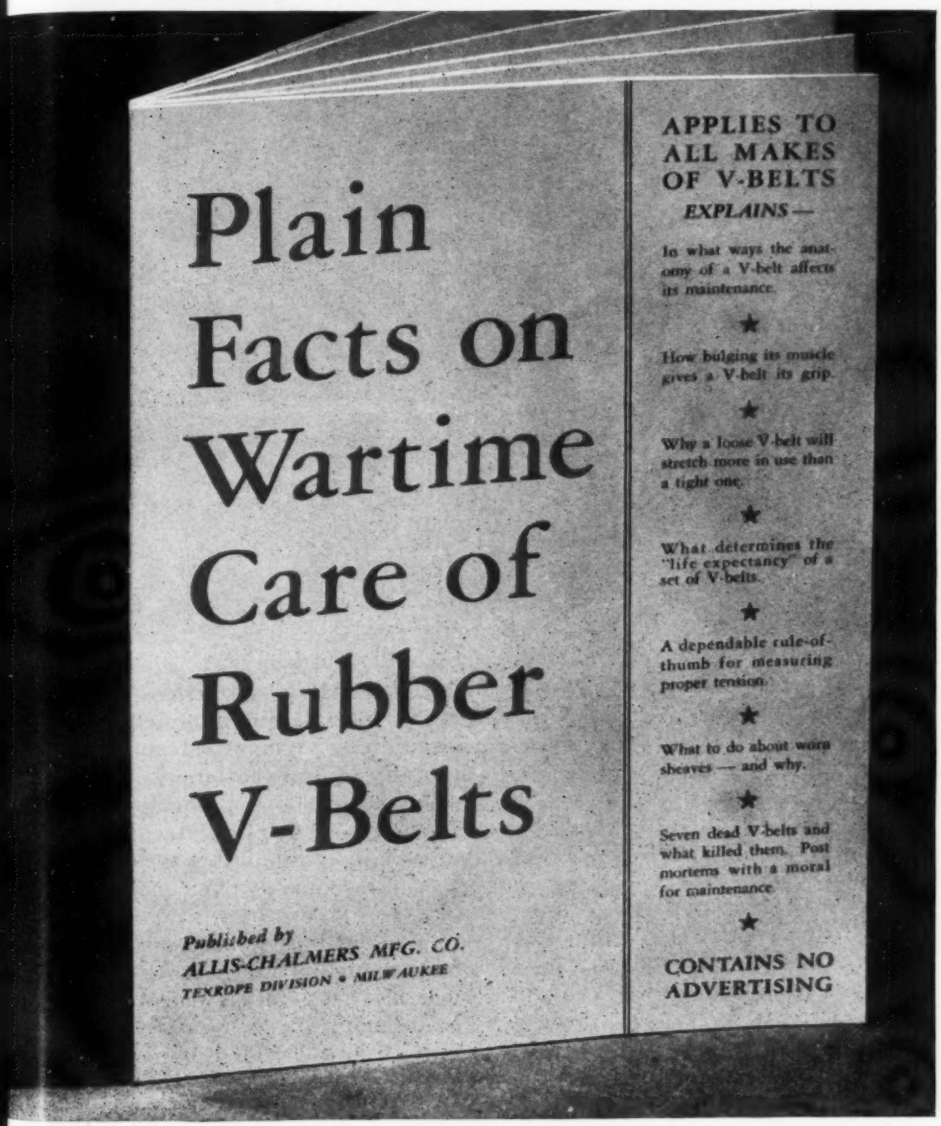
Lawrence, Mass. and Charlotte, N. C. Products stocked in Charlotte and Lawrence. Reeds manufactured at both plants. Branch offices: Clifton Watson, Manager of Southern Sales, George Field, Plant Manager, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2543) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 171 Madison Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

Argentina, Buenos Aires, Roberto Zander, 345 Juan Jaures; *Brazil,* Rio de Janeiro, A. Polak, Caixa Postal 362; *Chile,* W. L. Robinson, Casilla 1570, Valparaiso; *Cuba,* Havana, J. M. Perez-Pena, Box 1611; *Mexico,* Mexico City, D. F. Leo Lenk, Apartado 533; *Colombia,* Medellin, C. E. Halaby & Co., P. O. Box 139.

See latest TEXTILE WORLD YEARBOOK for Details on all Emmons Products.

ANNOUNCING ALLIS-CHALMERS' NEW

Wartime Guide to V-belt Care!


Plain Facts on Wartime Care of Rubber V-Belts
Published by
ALLIS-CHALMERS MFG. CO.
TEXROPE DIVISION • MILWAUKEE
APPLIES TO ALL MAKES OF V-BELTS
EXPLAINS—
In what ways the anatomy of a V-belt affects its maintenance.
★
How bulging its muscle gives a V-belt its grip.
★
Why a loose V-belt will stretch more in use than a tight one.
★
What determines the "life expectancy" of a set of V-belts.
★
A dependable rule-of-thumb for measuring proper tension.
★
What to do about worn sheaves — and why.
★
Seven dead V-belts and what killed them. Post mortems with a moral for maintenance.
★
CONTAINS NO ADVERTISING

It's free to every engineer, executive and maintenance man now concerned with raising V-belt performance to new wartime standards of efficiency. Rubber V-belts are a precious national asset! And here's the full, interesting story on how to make them work better, last longer than ever before. Send to Allis-Chalmers for this valuable new handbook today!

[PRINCIPLE OF THE V-BELT DRIVE]
Like Bending an Arm
...Bending a V-Belt
Bulges its Muscle!
HOW BULGING TENDENCY GIVES V-BELTS THEIR GRIP

FULLY ILLUSTRATED—It's packed with practical data...specially designed for training new men!

V-Day needs every V-Belt

FREE! Every engineer should have this important new handbook in his technical library. It applies to *all* makes of V-belts...contains no advertising. Tear out the order form and send it in *now!*

ALLIS-CHALMERS MFG. CO.
Milwaukee, Wisconsin

Gentlemen:

Yes, I would like to receive a *free* copy of "Plain Facts on Wartime Care of Rubber V-belts."

Name: _____

Title: _____

Company: _____

Street Address: _____

City & State: _____

A 1551-7

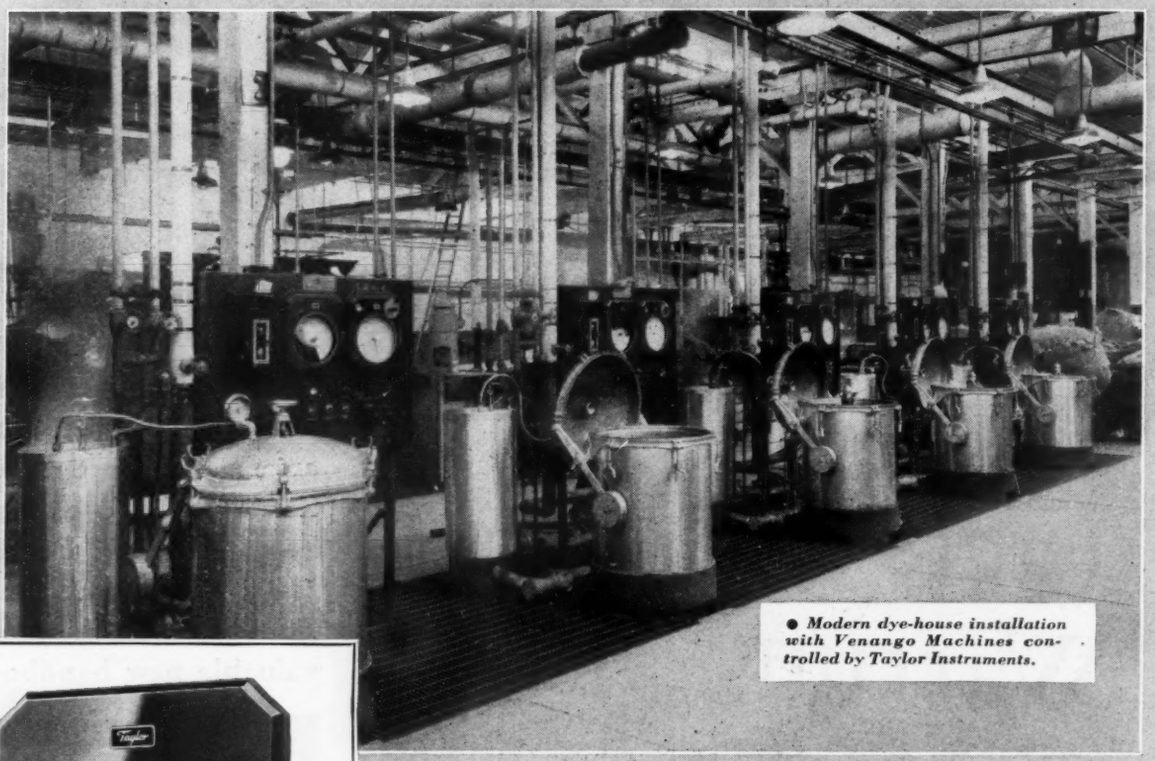
ALLIS-CHALMERS

WE WORK FOR VICTORY — WE PLAN FOR PEACE

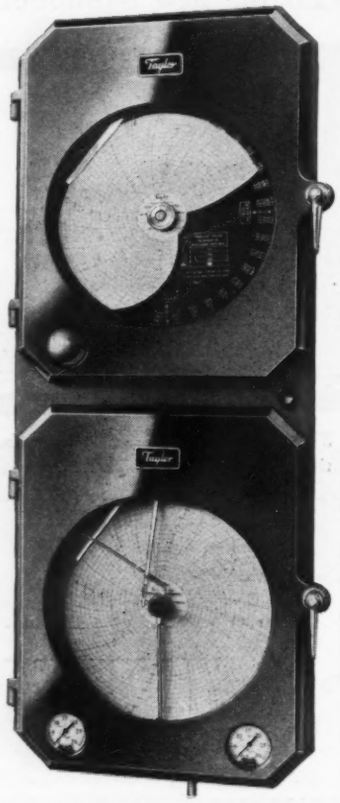
TEXROPE* SUPER-7 V-BELTS

*Trade mark registered U. S. Patent Office. Texrope Super-7 V-Belts are the result of the cooperative research and design genius of two great companies — Allis-Chalmers and B. F. Goodrich — and are sold exclusively by Allis-Chalmers. Available in all sizes.....½ h.p. to 2,000 h.p.

Taylor Coordinated Control System for combination package and raw stock dye machines



● *Modern dye-house installation with Venango Machines controlled by Taylor Instruments.*



● *The new Taylor Time-Schedule Controller with push-button control illustrated (above) has been incorporated in control systems for piece-dyeing and yarn-dyeing machines, the latter with automatic flow reversal.*

ASSURANCE of *uniform quality* and *peace of mind* is the reason for installing this outstanding Taylor Coordinated Control System.

Temperature is controlled on a definite time basis by means of a Taylor Time-Schedule Controller. Flow of dye liquor is reversed at any desired interval by completely adjustable Taylor Flex-O-Timer Cycle Controller.

Automatic-to-manual feature permits control of liquor flow direction manually, as well as automatically, to interrupt when necessary the automatic flow reversal.

Signal lights show direction of liquor flow at all times. Operator is notified by horn and signal light when samplings are to be made.

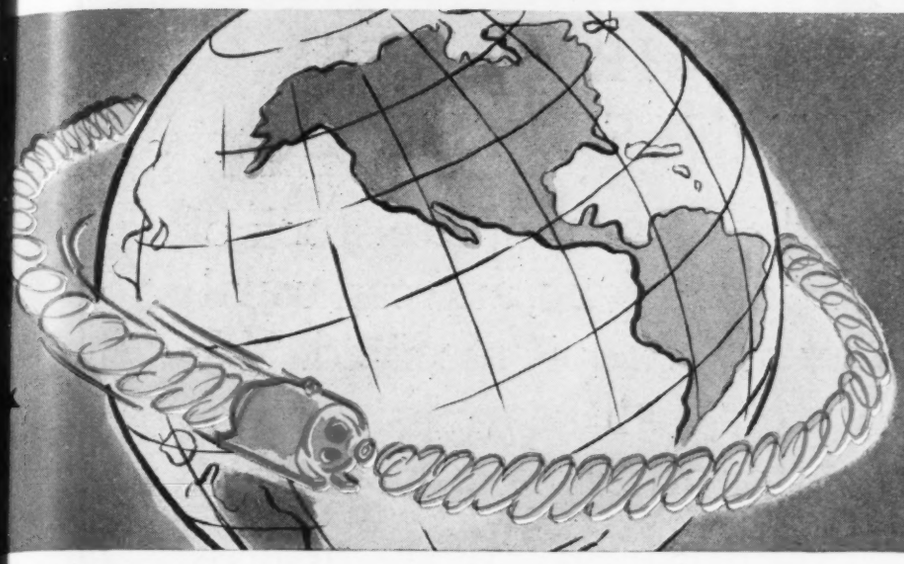
RESULTS—Such a control system speeds up the entire dyeing operation. It helps match shades or repeat colors with minimum number of additions. Savings in steam and dyestuffs are substantial.

Illustration shows application of system to Venango Dye Machines, but is equally adaptable to other types of package dye machines.

In these days of pegged prices, when mills must absorb any increases in manufacturing costs and labor, it is even more essential that you promote efficiency in processing. Call in a Taylor Engineer to get full information on this dye-house control. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

Taylor Instruments
MEAN ACCURACY FIRST
Indicating, Recording, Controlling
TEMPERATURE, PRESSURE, HUMIDITY, FLOW AND LIQUID LEVEL

Wartime Problems



ROUND THE WORLD EVERY 8 DAYS!

That's the rim-travel of a rotor in many electric motors now working all around the clock on Victory production!

Motors that worked 1800 hours in a peacetime year are now working a full *8700 hours a year.* Result: problems of maintenance are *quadrupled.* And more...

For motors must receive *finer* care than ever. Whose motors last longest may have a lot to do with who *wins* this war!

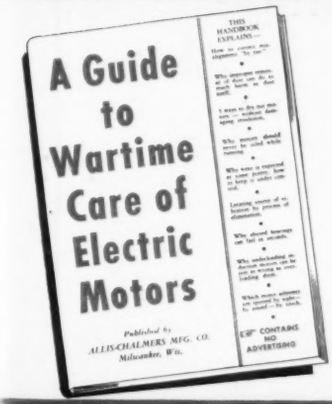
CALL FOR Wartime Solutions

AN ATTACK IS THE BEST DEFENSE

Taking the initiative against wear always has been sound maintenance practise. In wartime, it's a *vital* practise!

First, because wear now works *faster.* Second, because avoidable breakdowns *cannot be afforded* in the victory effort!

Beating wear to the punch is the basic principle of a new Allis-Chalmers publication: "A Guide to Wartime Care of Electric Motors." You'll find it *invaluable!*



Order This Free Book!

Every engineer, production manager and maintenance man will want a copy of "A Guide to Wartime Care of Electric Motors" for his technical library—and for immediate use, too!

It outlines the "natural enemies" of an electric motor and the most effective methods of combatting them. To be of maximum use to you, it applies to *all makes* of standard, general-purpose motors.

It's liberally illustrated — contains no advertising.

Tear out the order form now and send in to Allis-Chalmers for *your* free copy of this timely handbook.

ALLIS-CHALMERS MFG. CO.
Advertising Dept.
Milwaukee, Wisconsin

Gentlemen:

Yes, I would like to receive *free of charge* "A Guide to Wartime Care of Electric Motors."

Name:.....

Title:.....

Company:.....

Street Address:.....

City and State:.....

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ALLIS-CHALMERS
MILWAUKEE · WISCONSIN

WE WORK FOR VICTORY — WE PLAN FOR PEACE

PICKER REPAIR PARTS WHEN YOU NEED THEM

WE keep on hand a very complete stock of all parts for Kitson pickers, and can usually ship the same day an order is received. We also can furnish beaters, ball bearings, screens and many other parts for other makes of pickers.

Under wartime conditions, it is of the utmost importance to keep machines running constantly and to be able to get prompt delivery on repair parts for keeping them running constantly.

In an emergency, a telegram or a telephone call will have the necessary repair parts at your plant the following day.

It is also a good idea to check your stock room and order picker parts on which the stock is low or is exhausted.

We can completely rebuild your pickers exactly like new, and when pickers are practically worn out and in need of more than ordinary repair parts, they can be completely renewed at far less than the cost of new machines with new frames.

AldricH MachinE

Greenwood, **WorkS** South Carolina

KEEPS PRODUCTION

Full Speed Ahead !

PIVOTAN BELTING

Developed by us to withstand the extreme speed and rapid flexing imposed on short-center drives—the *plus* wearing and gripping qualities of PIVOTAN leather belting, and its higher degree of flexibility, ideally suit it for the strain that continuous operation has thrown on belting in most textile plants. Write us for samples and prices.

SOUTHERN BELTING COMPANY

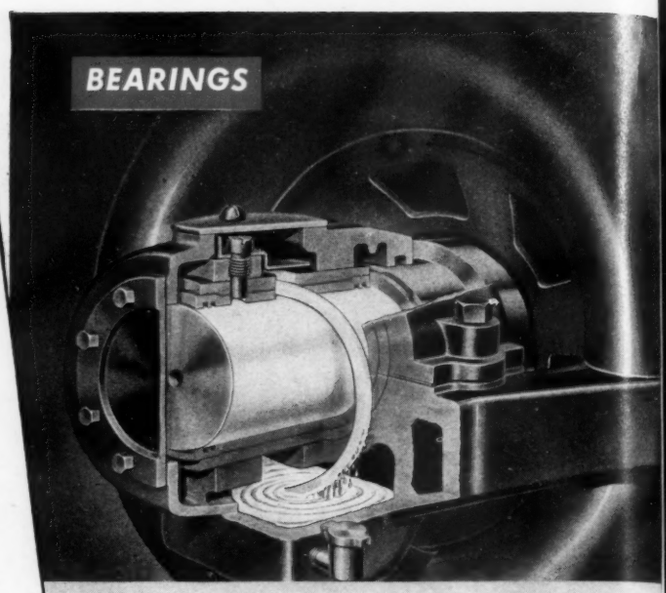
Manufacturers and Distributors

ATLANTA

Leather Belting	Rubber Belting	V-Belts and Sheaves	Fiber and Metal Pulleys	Rockwood-Southern Pivoted Motor Drives	Westinghouse Motors

WHILE YOU'RE WORRYING ABOUT PRODUCTION...

YOU AND YOUR MEN are working hard for production... driving to meet shipping dates. You know your machines are being "driven"—often by "green" help. Wouldn't you welcome aid in making sure *every* machine is properly taken care of with Correct Lubrication?



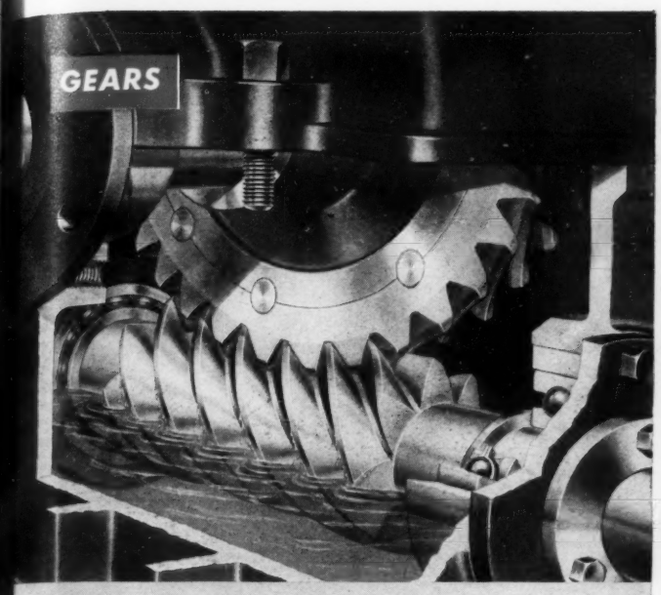
LOOKS SIMPLE—but size and type of bearing, speed, heat, load, method of application, all affect the choice of a lubricant. "Correct Lubrication" is a science! It demands skilled experience counsel.

Who's Looking Out

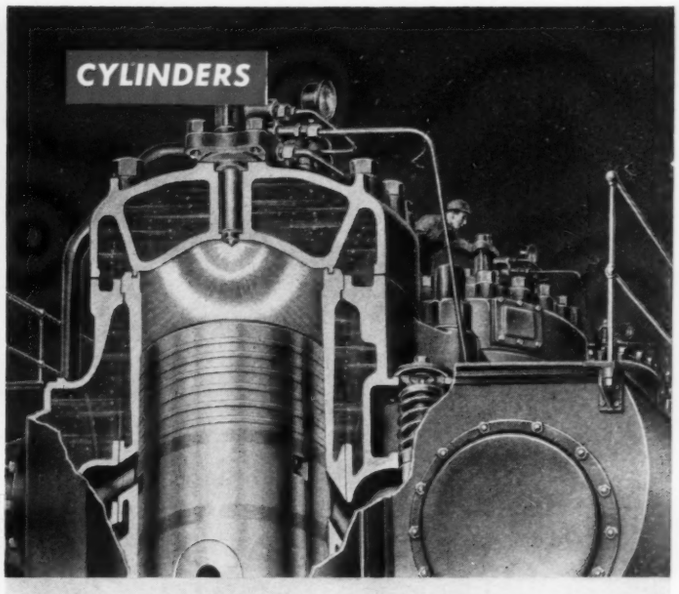
HERE'S A PLAN TAILOR-MADE FOR YOUR PLANT

THOSE TWO STEPS at the right bring you the sum of Socony-Vacuum's 76 years' experience, *the world's greatest*, in the lubrication field. Today, when there is no time for "second guesses" this knowledge is proving its value in helping industry do its biggest job!

1 LUBRICATION PLANNING—After careful study of your machines and their operating conditions, your Socony-Vacuum man will work out a guide of lubrication recommendations with your own engineers.



IRREPLACEABLE—Precision-made gears, in fact all production equipment, should be viewed as irreplaceable. This places an added burden on lubrication . . . emphasizes need for only the best!



DEPENDABLE POWER—The hum of your power plant is the heartbeat of your production line. Diesels, turbines, steam engines exist on "Correct Lubrication" as prescribed by a lubrication engineer.

for Your Machines?

2 LUBRICATION CONTROL—By means of this lubrication program . . . through the help of the Socony-Vacuum man . . . you will be freer to drive for more production. He will gladly help look out for your machines!

TO HELP MAINTAIN WARTIME PRODUCTION CALL IN

SOCONY-VACUUM

FOR *Correct Lubrication*

GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC. • Standard Oil of N.Y. Div. • White Star Div. • Lubrite Div. • Chicago Div. White Eagle Div. • Wadhams Div. • Southeastern Div. (Baltimore) • Magnolia Petroleum Co. • General Petroleum Corp. of Calif.

But first — they must be processed by

CARD CLOTHING

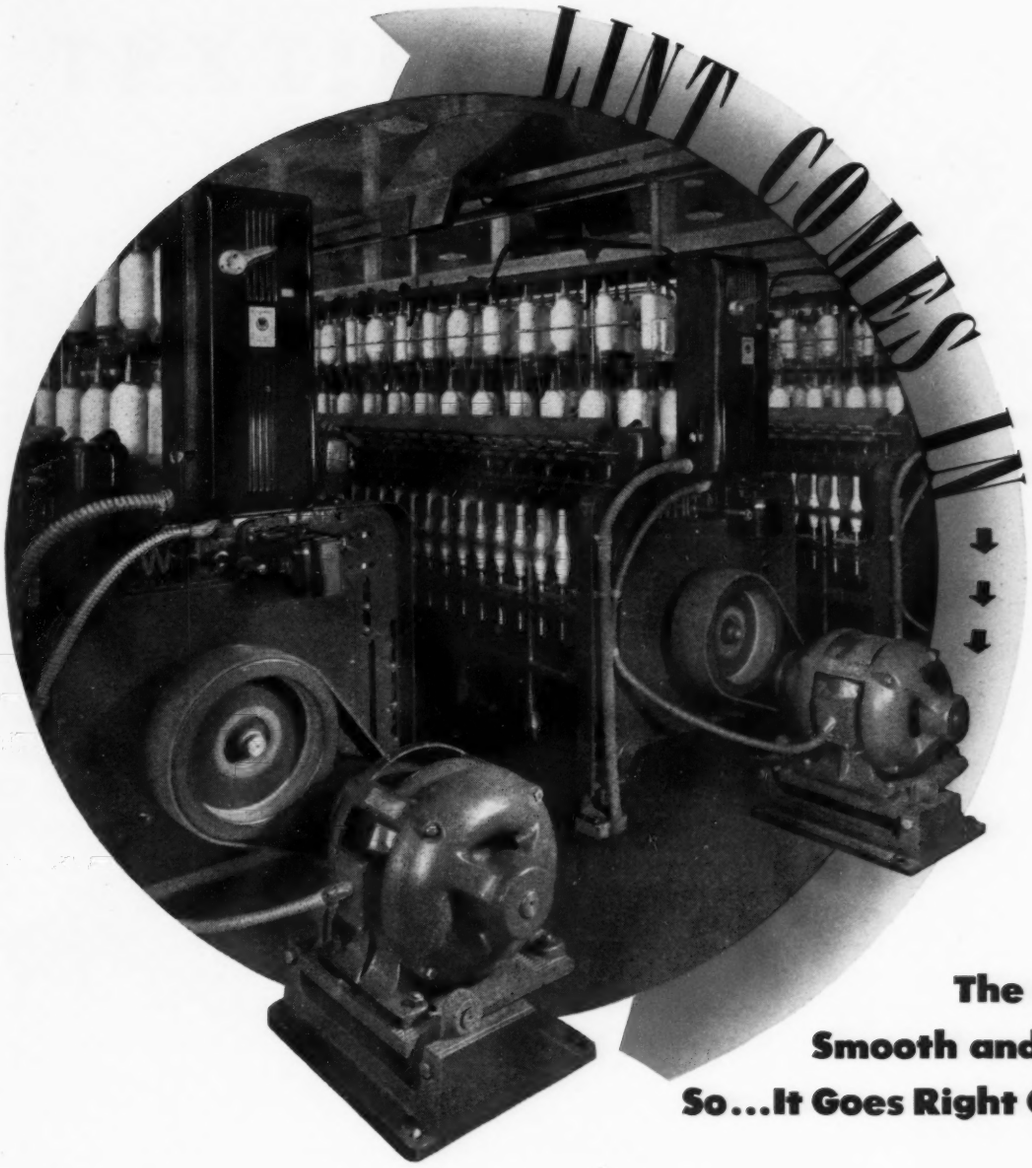
Processed to get the best yarn with the least waste from your cards. ★ Tuffer Card Clothing made by our patented Tufferizing process gives you this extra help to better yarn and greater production. ★ Every possible effort is being made to keep you supplied with vital cardroom products in time. ★ We at the home of "Tuffer" are operating at full capacity on Defense production to insure Victory.

HOWARD BROS. MFG. CO.

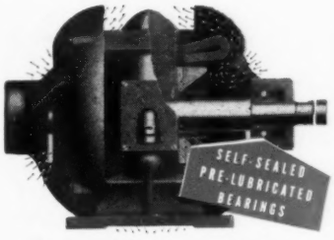
WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N. C.
Branch Offices: Philadelphia, Pa., Dallas, Texas
Canadian Agents: Colwool Accessories, Ltd., Toronto 2

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breast Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles



The Surface is Smooth and Round... So...It Goes Right Out Again



Ball bearings are factory-sealed, factory lubricated, completely enclosed. They keep the grease in, lint and dirt out.

There are no grease spots where lint can stick. No need for inspection or attention until after three years of service.

Westinghouse Lint-Free Motors Insure Cool, Continuous Operation—Keep Machines Running with Minimum Motor Care

You can't get away from lint in a textile mill—but you can keep it under control—minimize its damage. That's exactly what the Westinghouse Lint-Free Motor does.

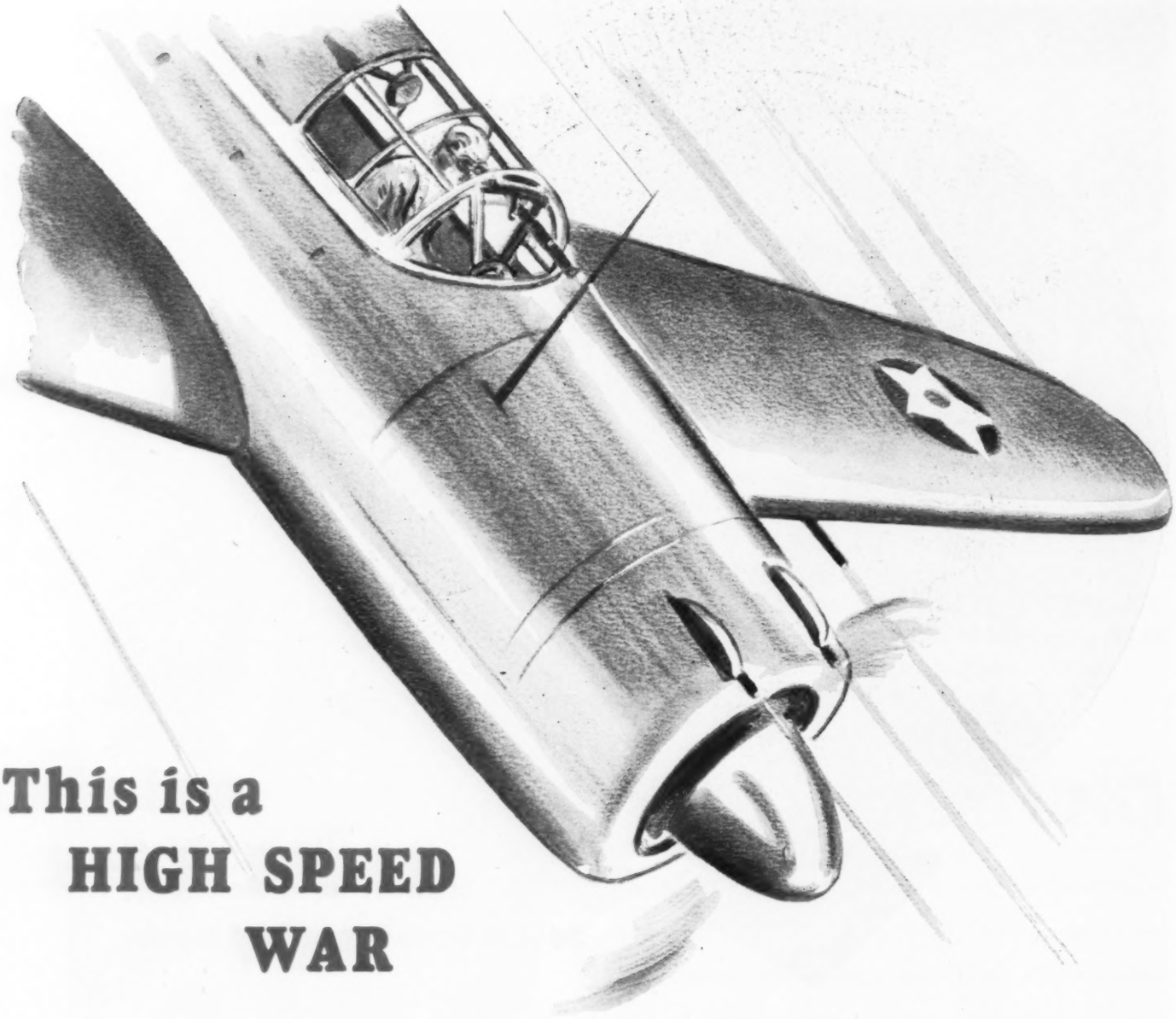
The motor stays "lint-free," because lint passes in, through, and right out of the motor. Large, unobstructed air passages, high-gloss enamel surfaces, expel lint before it can catch hold — the motors clean themselves.

One-piece skeleton frame aids ventilation and inspection. Note the large air passages which direct the air flow around the stator windings—and out again. Clean, cool, continuous motor operation is assured. Get full details on how Westinghouse Lint-Free Motors can eliminate handicaps and hazards of lint in your mill. See your Westinghouse representative or write Westinghouse Electric & Mfg. Co., East Pittsburgh, Pennsylvania, Department 7-N.

J-21215

Westinghouse

LINT-FREE MOTORS



This is a HIGH SPEED WAR

Modern warfare moves at a speed that was scarcely dreamed of just a decade ago. To match the speed of our enemies -- and beat them at their own game -- requires maximum ingenuity on *all* fronts, military and industrial.

UNIVERSAL RING

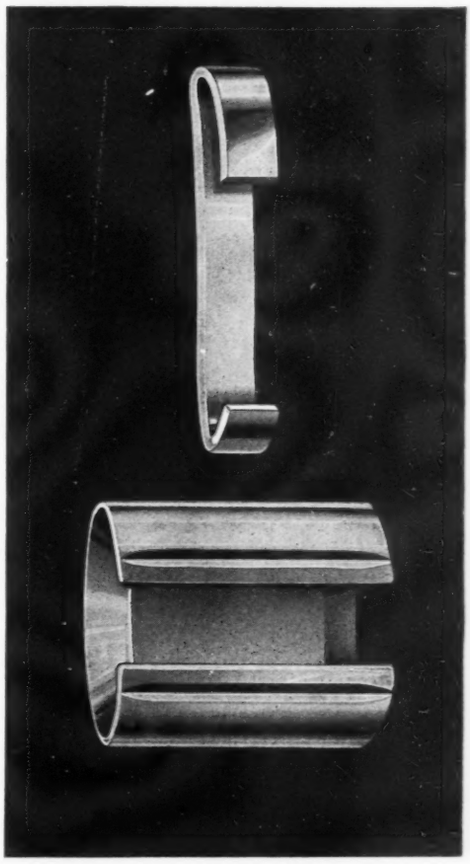
TEXTILES
Are Speeded Up
FOR VICTORY

Textiles are playing a part in the war that can't be overemphasized. Output must be kept at peak figures to meet the demands of our armed forces and our civilian population. That means *machinery* must be operated at peak *efficiency*. Spinning and twisting frames—whether old or new—cannot attain that efficiency without *good* ring travelers.

Universal Standard Ring Travelers are precision-made from the finest steel alloys. They're uniform in weight and shape, so correct yarn tension will be maintained and the entire yarn output will be smooth and strong. U. S. Travelers are *durable*, and actually cost less because they last longer, wear better, assure smoother production. Now while your frames are running full-speed, specify U. S. Ring Travelers—for maximum efficiency at "the focal point of good yarns."

The Bowen Patented Bevel Edge enables U. S. Ring Travelers to produce ideally smooth, even yarn. There are no split ends in throwing—no angular edges to flatten the end—no fly waste in spinning and twisting. Made and stocked in all sizes and weights, for all yarn counts.

U. S. Travelers will reach you in sealed metal containers, which keep them in perfect condition, prevent tampering or loss in count.



U. S. RING TRAVELER CO.

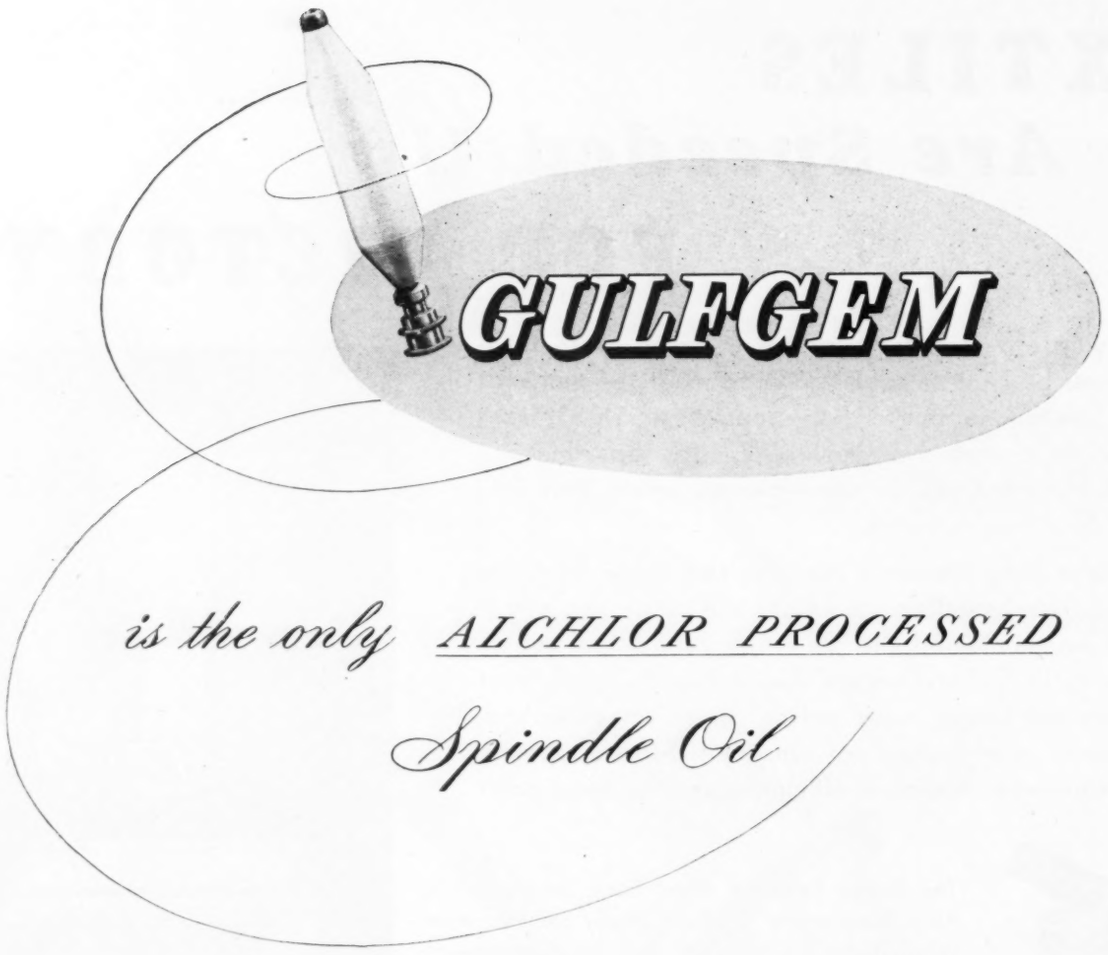
PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN, Pres. and Treas.

Southern Representatives

William P. Vaughan, P. O. Box 792, Greenville, S. C.
William H. Rose, P. O. Box 792, Greenville, S. C.
Torrence L. Maynard, P. O. Box 456, Belmont, N. C.
Oliver B. Land, P. O. Box 158, Athens, Georgia

STANDARD TRAVELERS



Why this fact is important to you:

Now that your frames must run continuously for longer periods of time in order to meet production demands, more than ever you need the highest quality spindle lubricating oil you can obtain—an oil which provides an extra margin of protection to this vital equipment.

And that oil is Gulfgem, for Gulfgem Oil *alone* is refined by Gulf's own Alchlor Process, the most effective method yet known for removing unstable hydrocarbons and gum-forming constituents from oils. Thus Gulfgem Oil provides a tough and stable film which insures minimum wear, minimum ends down, minimum power consumption and maximum intervals between spindle base cleaning periods. Gulfgem Oil is the world's finest oil for spindle lubrication!

We suggest that you talk with the Gulf engineer in your vicinity about this remarkable spindle lubricating oil at your first opportunity. He will be pleased to give you complete details—without obligation.

OIL IS AMMUNITION . . . USE IT WISELY!

GULF INDUSTRIAL LUBRICATION

GULF OIL CORPORATION · GULF REFINING COMPANY

GULF BUILDING, PITTSBURGH, PA.

THE *Gilmer* NATIONAL POWER-RECOVERY PLAN

USE WHAT YOU LOSE

IT SPOTLIGHTS POWER WASTE

ELECTRICITY
STEAM
MECHANICAL TRANSMISSION
COMPRESSED AIR
WATER
REFRIGERATION
BOILER ROOM
PRIME MOVERS

Gilmer BELTS

INSTRUCTIONS FOR USE OF ESTIMATOR

Gilmer BELTS

1. The Gilmer National Power-Recovery Plan contains a series of Estimators, each relating to a certain phase of power service such as electricity, steam, hot and cold water, mechanical transmission, compressed air, refrigeration, generation, etc. This Estimator covers that phase of power service assigned to you for checking for power leaks.

2. Spot and check all the leaks in the service. You probably know them well and welcome this opportunity to get the corrections made in order to improve production. The specific practical suggestions below may be helpful.

3. List the location of all principal power losses on the Estimator together with your recommendation for betterment. Group the losses as "Urgent", "Important", or "Less Important".

4. State the approximate time required to correct the power losses, and whether the needed materials for making the corrections are available. If they are not available, state what must be done to obtain them. Give an indication of the cost of the job.

5. Having filled out the Estimator, sign it, and return immediately to the person in your company from whom you received it.

Bear in mind that the objective of the Gilmer National Power-Recovery Plan is to *save power*. Do your part to make America *powerful* by reporting on this Estimator every principal power leak which it is feasible to correct in your department.

TYPICAL WAYS TO SAVE ELECTRICITY IN THE PLANT

Individual experience will suggest many other points at which power leaks can be plugged and power saved.

Fit the motor to the job—Inventory your motors in all departments. Make sure (a) that most efficient motors drive machines that run longest hours; (b) that each motor is big enough for the job, but no bigger (over-size motors lower power factor); (c) that low-speed alternating-current, direct-drive motors are not used where high-speed AC units with speed reducers would improve efficiency and power factor; (d) that several loads are grouped on one motor where this will reduce power consumption and increase production. **Result: Saving of 15 percent in kwhr consumption and 20 percent in kva load.**

★

Meter electricity to hold down wasteful use—Install individual meters on machines where friction load is likely to "creep up", and on large motors driving machines where operator controls amount of power used. Meter electricity to each factory department and charge department head for his actual consumption; nothing discourages waste like a monthly bill! **Result: 5 to 20 percent saving in total kwhr consumption.**

★

Check feeders to cut losses—Examine entire electrical distribution system to equalize loads on feeders, if necessary by interconnecting load centers. Test insulation to find defects causing actual leaks that sometimes amount to 5 to 10 percent of electricity distributed. Spot and correct overloaded feeders, particularly in buried conduits where overheating can cause failure. Remember that heat is the limiting factor; shift cables from high-temperature areas; rig means of cooling where shifting is impossible. **Result: 3 to 5 percent saving in kwhr consumption; 5 to 15 percent increase in feeder capacity; prevention of sudden failures in the distribution system.**

★

Boost power factor—If power factor is below 85 percent look for motors that are too large for their loads, for drives where synchronous motors should replace induction units. If these changes fail to increase power factor sufficiently, install capacitors. **Result: A boost in the power factor from 70 to 90 percent increases peak capacity 30 percent.**

★

Schedule loads to cut peaks—If peak load is high in relation to average loads, examine necessity of every load that contributes to the peak. See if some production operations can be staggered and if non-essential loads (air-conditioning for example) can be cut off during peaks. **Result: Capacity is increased 100 kw for every 100 kw shifted from peak.**

★

Lighting—Inventory all lighting for unneeded high-wattage lamps. Replace filament lamps with fluorescents, if obtainable, to get same illumination with 75 percent less kwhr consumption. Make one man responsible in each department for turning off unneeded lights. **Result: 50 percent saving in lighting kilowatt-hours and peak kilowatts.**

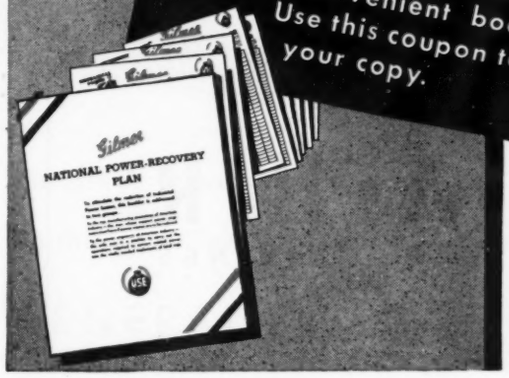
★

Maintain electrical system to cut losses and prevent failures—Organize for systematic cleaning, inspection, and repair of feeders, switchgear, transformers and motors. Establish a definite schedule and responsibility for these jobs, and see that the work is carried out. **Result: Savings of 10 to 15 percent by the proper care and lubrication of motors and mechanical power transmission equipment; breakdowns are prevented which cause vital production outages.**

★

The savings shown above are based on the experience of leading power engineers in hundreds of average plants throughout the country.

The Gilmer National Power-Recovery Plan is all contained in one convenient booklet. Use this coupon to get your copy.



L. H. GILMER COMPANY, Tacony, Phila., Pa.

Gentlemen:

Please send me a copy of the National Power-Recovery Plan, without cost or obligation.

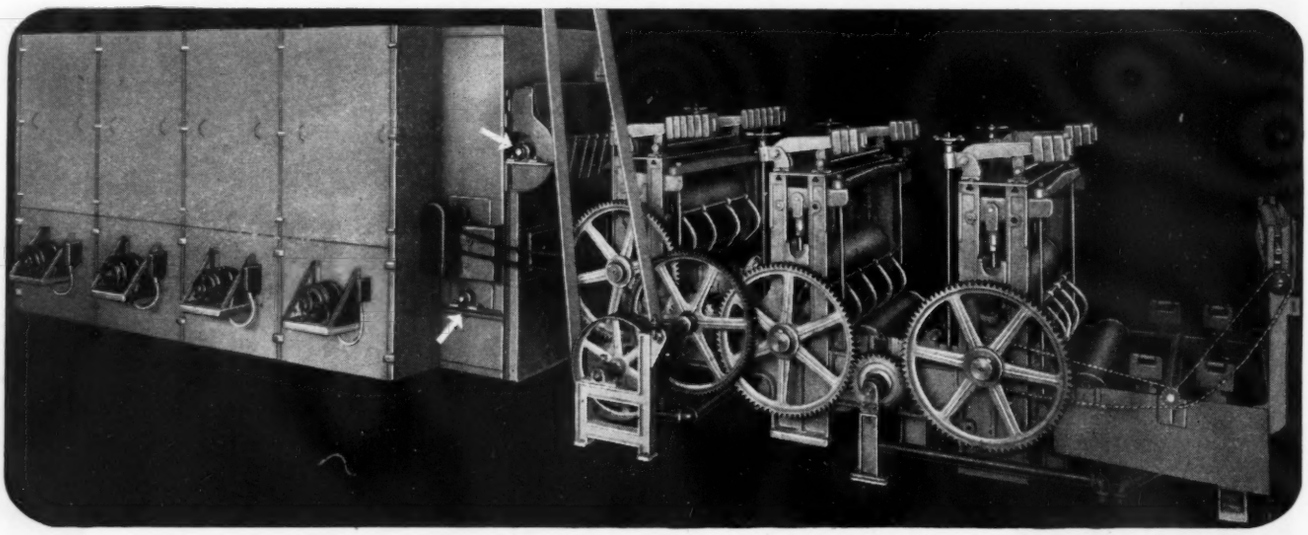
Name _____

Firm _____

Address _____

_____

PRODUCTION DOUBLED!

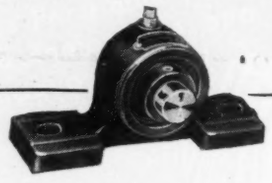


. . . FAFNIR Ball Bearings supply essential friction-freedom in extra capacity SARGENT BACK WASHERS AND DRYERS!

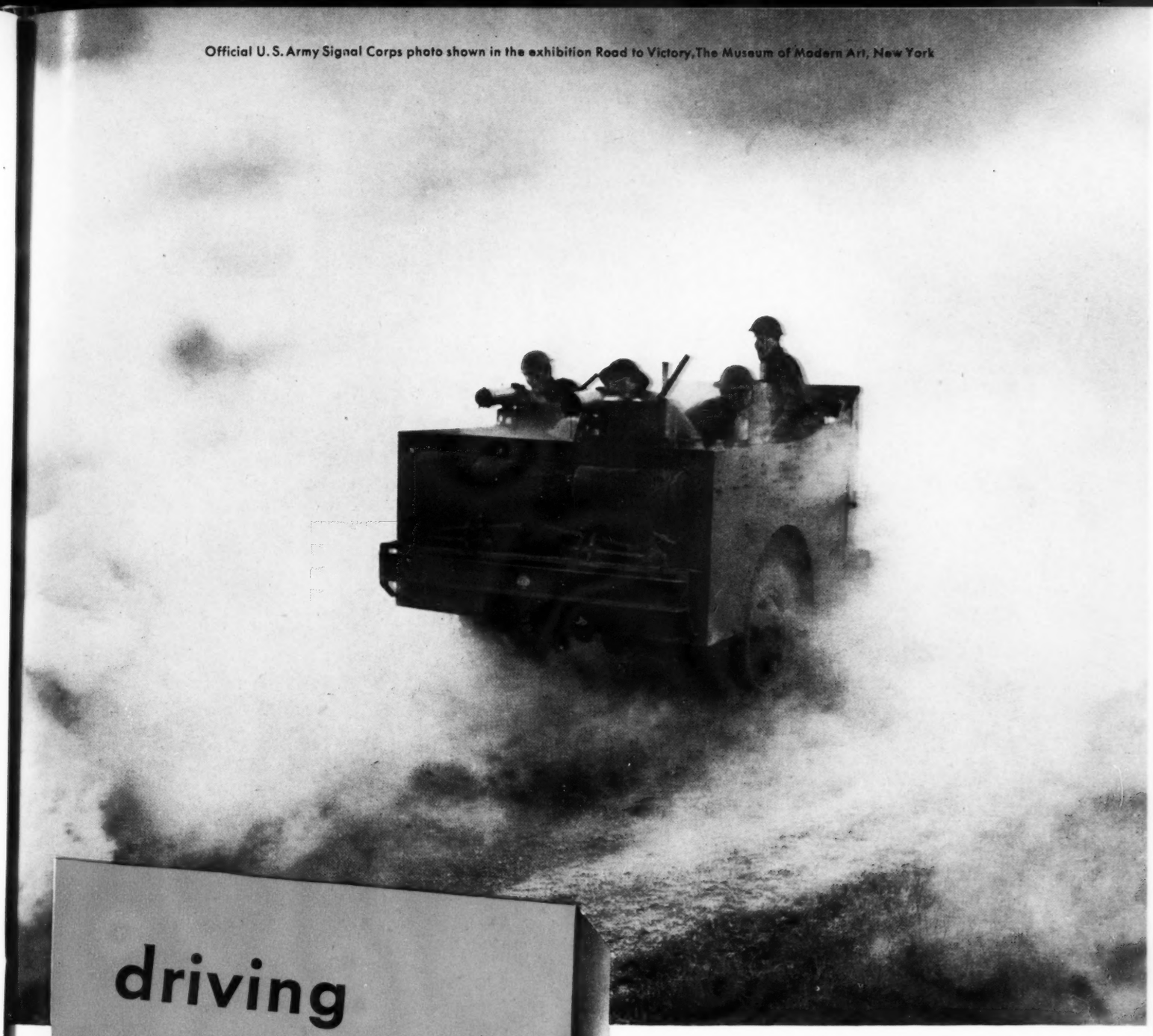
Fafnir Ball Bearings – liberally used – figure prominently among the many features of the redesigned Sargent Back Washers and Dryers which permit *doubling* the number of ends ordinarily run through the machine. You'll find them at almost every point of motion – in the washing and drying chamber on conveyor shafts – on the feed and press roll shafts – and wherever freedom from drag and friction is required for efficient, steady machine output.

The wide variety of Fafnir Ball Bearings – especially adaptable to all types of textile machinery – made it possible for the designers of the Sargent Back Washers and Dryers to meet every requirement of good engineering that will result in user satisfaction. Sargent has an 85-year old reputation for building outstanding textile machinery.

With machinery makers, mill operating and maintenance men, you'll find that Fafnirs are selected time and time again for greater economy and efficiency in both new machines and changeovers. Fafnirs Balanced Design – larger balls and deeper races – mean greater load capacity and longer bearing life. For almost every turning point on every piece of textile machinery, there is a Fafnir Ball Bearing Unit that will save power and cut maintenance time and costs. The Fafnir Bearing Company, New Britain, Conn. Branch Offices: Atlanta, Birmingham, Boston, Charlotte, Dallas.



FAFNIR
BALL BEARINGS



Official U. S. Army Signal Corps photo shown in the exhibition Road to Victory, The Museum of Modern Art, New York

driving through!

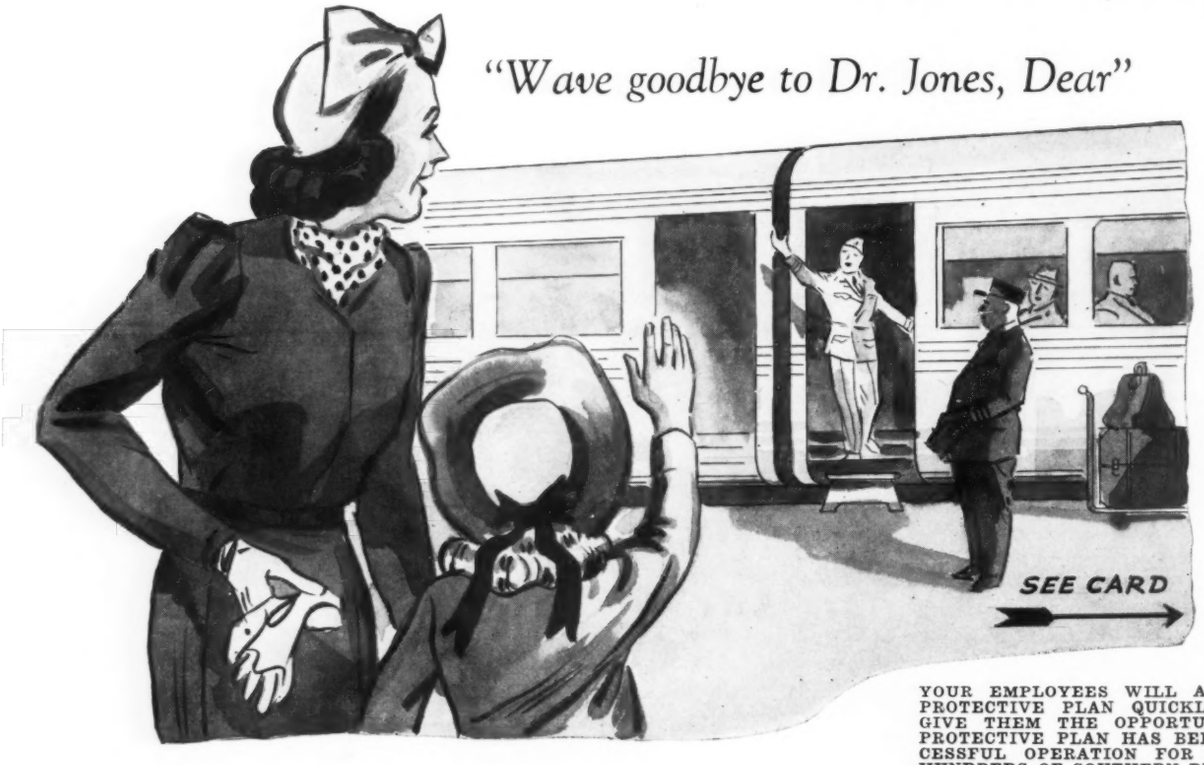
The lightning juggernauts of modern war blast through all obstacles....These are tradition-shattering and precedent-making times. This is a dynamic war of actionized ideas; there is no place for casual theories.

Hundreds of tons of General's dyestuffs are being shot to strategic spots...making deadlines on the dot! General is at your command and stands ready to execute your orders!

GENERAL DYESTUFF CORPORATION • NEW YORK CITY

Your Business Needs these Hospital, Operation & Death Benefits

MORE THAN EVER NOW!



YOUR EMPLOYEES WILL ADOPT THE PROTECTIVE PLAN QUICKLY IF YOU GIVE THEM THE OPPORTUNITY. THE PROTECTIVE PLAN HAS BEEN IN SUCCESSFUL OPERATION FOR YEARS IN HUNDREDS OF SOUTHERN PLANTS AND FACTORIES. WRITE FOR DETAILED INFORMATION.

DOCTORS & NURSES GOING TO THE ARMY

By the end of this year, 35,000 nurses and 40,000 physicians and dentists will be away at war. In all probability, many thousands more of them will go to the army next year. This *increasing shortage* of medical service may mean increasing shortage of *man-power* in your mill or factory. Not only may employees' personal illness increase and become chronic, but men may have to lay off from work in order to nurse an ill wife or child.

You can help prevent this with the Protective Plan. *At no expense whatever to the employer,* the Protective Plan will furnish hospitalization for employees and their family. Such provision is valuable at all times but especially in this emergency when lack of proper medical attention may result in an epidemic which would prove costly to you and the War effort.

Some employees may now be chronic time-losers because of some condition which could quickly and permanently be corrected by surgery which it is now available; and thereafter they would become steady and more efficient workers for you.

PROTECTIVE LIFE

INSURANCE COMPANY

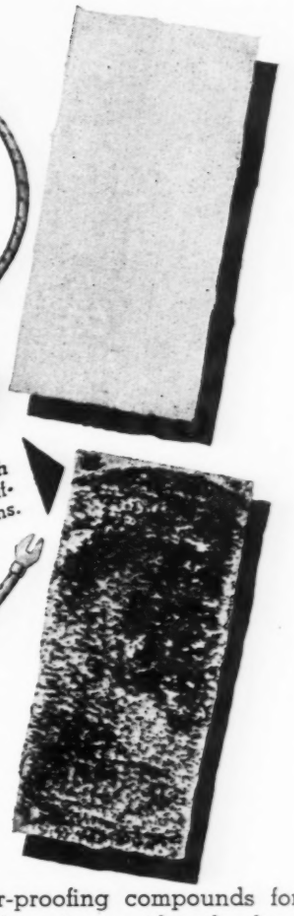
WILLIAM J RUSHTON
President

BIRMINGHAM
ALABAMA

DOWICIDE

INDUSTRIAL GERMICIDES AND FUNGICIDES

TESTED PROTECTION FOR TEXTILE CABLE COATINGS!



Cable braid—free from mold growth—treated with DOWICIDE and exposed to same conditions.

Cable braid—NOT treated with DOWICIDE—covered with mold after exposure to normal conditions.

VARIETY OF FABRICS MADE MOLD RESISTANT

ELECTRICAL CABLE BRAID, requiring oil-soluble preservatives, is being given long-life protection against mildew and mold growth with DOWICIDE*. This powerful industrial germicide and fungicide—a phenol derivative, manufactured by The Dow Chemical Company, provides an economical and effective way of making this vital equipment last longer and give better service.

The same effective protection, against mildew and mold growth, that DOWICIDE gives to cable braids can be applied to a wide variety of fabrics. When DOWICIDE is used in the water-proofing compounds for application to cellulosic fibers it provides the best protective measure known. Thus effective mildew and rot-proofing of canvas and other cellulosic products becomes a simple as well as an economical procedure.

Special literature on this subject of protection for textiles is available. Let us send you the *complete* story about DOWICIDE—the Dow product that gives longer life to fabrics.

*Trade Mark Reg. U. S. Pat. Off.

DOW

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York · St. Louis · Chicago · San Francisco · Los Angeles · Seattle · Houston

AIR BORNE DESTRUCTION

can come to Industry, too!

As devastating as war itself—the dust laden cone of a raging tornado leaves nothing standing in its path of destruction.

Far less dramatic, but none the less destructive—industrial dust is the air-borne menace that strikes at industry to break down machinery—spoil materials in process and cripple the efficiency of trained workers.

Like a tornado, dust attacks without warning! But, fortunately it need not catch any plant unprepared—for scientific research has made the control of atmospheric and process dusts a practical science.

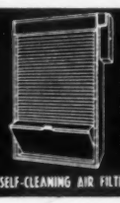
In the forefront of this battle against sabotage by dust are the engineering and research departments of the American Air Filter Company, which have developed dust control units especially suited to textile mill needs. Outstanding among these is the Electro-Matic air filter which collects the finest air-borne particles electrically and cleans itself as its cleans the air.

Write for "AAF In Industry", a new booklet which describes the complete line of American Air Filter equipment. There's no obligation, of course.

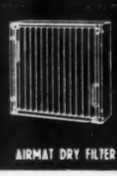
AMERICAN AIR FILTER CO., INC., 275 CENTRAL AVENUE, LOUISVILLE, KY.

In Canada, Darling Bros., Ltd., Montreal, P. Q.

AMERICAN AAF AIR FILTERS

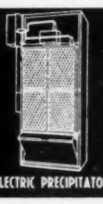


SELF-CLEANING AIR FILTER



AIRMAT DRY FILTER

AIRMAT DUST ARRESTER



ELECTRIC PRECIPITATOR

ROTO-CLONE PRECIPITATOR

Grip a Bending V-Belt

You'll See *How* the CONCAVE SIDE

Saves Belts-Saves Rubber-Saves Power!

Bend *any* V-belt and you can feel it change shape! The top is under tension and grows narrower. The bottom is under pressure—therefore it widens. These two conflicting stresses force a straight-sided V-belt to *bulge* in the sheave groove. (See figure 1 on the right.) This bulging causes uneven wear on the sides of the belt—*shorter life!*

Now look at figure 2. There you see what happens if the V-belt is built with the patented Concave side. The stresses of bending merely straighten the Concave side—making it exactly fit the sheave groove. This means uniform wear and, therefore, *longer life*—a saving in belts, a saving in the Nation's rubber supply. Again, the full side of the belt *uniformly* grips the pulley—carries heavier loads without slipping—another saving of belts and a saving in power too!

Only belts built by Gates are built with the Concave side, a Gates patent.

What Happens When a V-Belt Bends

FIG. 1

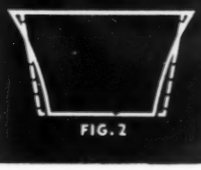


FIG. 2

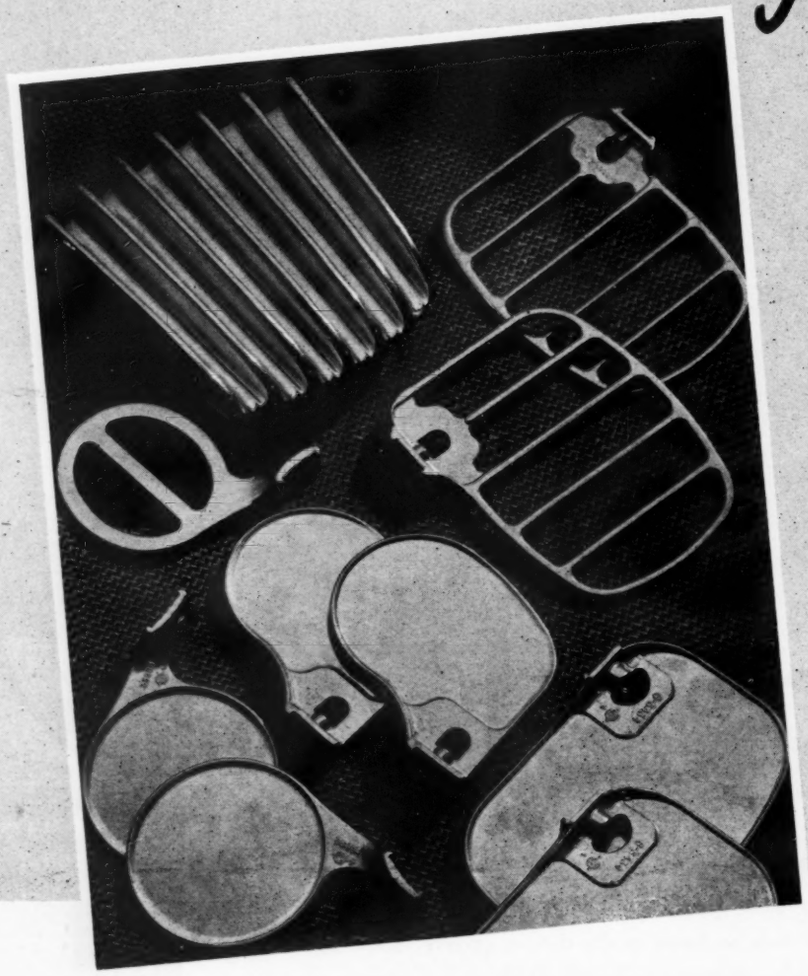
THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
Dallas, Tex. 2213 Griffin Street
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg
Los Angeles, Cal. 2240 East Washington Blvd.
Charlotte, N. Carolina 507 Builders' Bldg.
Greenville, S. Carolina 201 Woodside Bldg. Annex
Atlanta, Georgia 738 C. & S. Natl. Bk. Bldg.

Perhaps they only need a "face lifting"



Worn parts can often be built up and salvaged by metallizing.

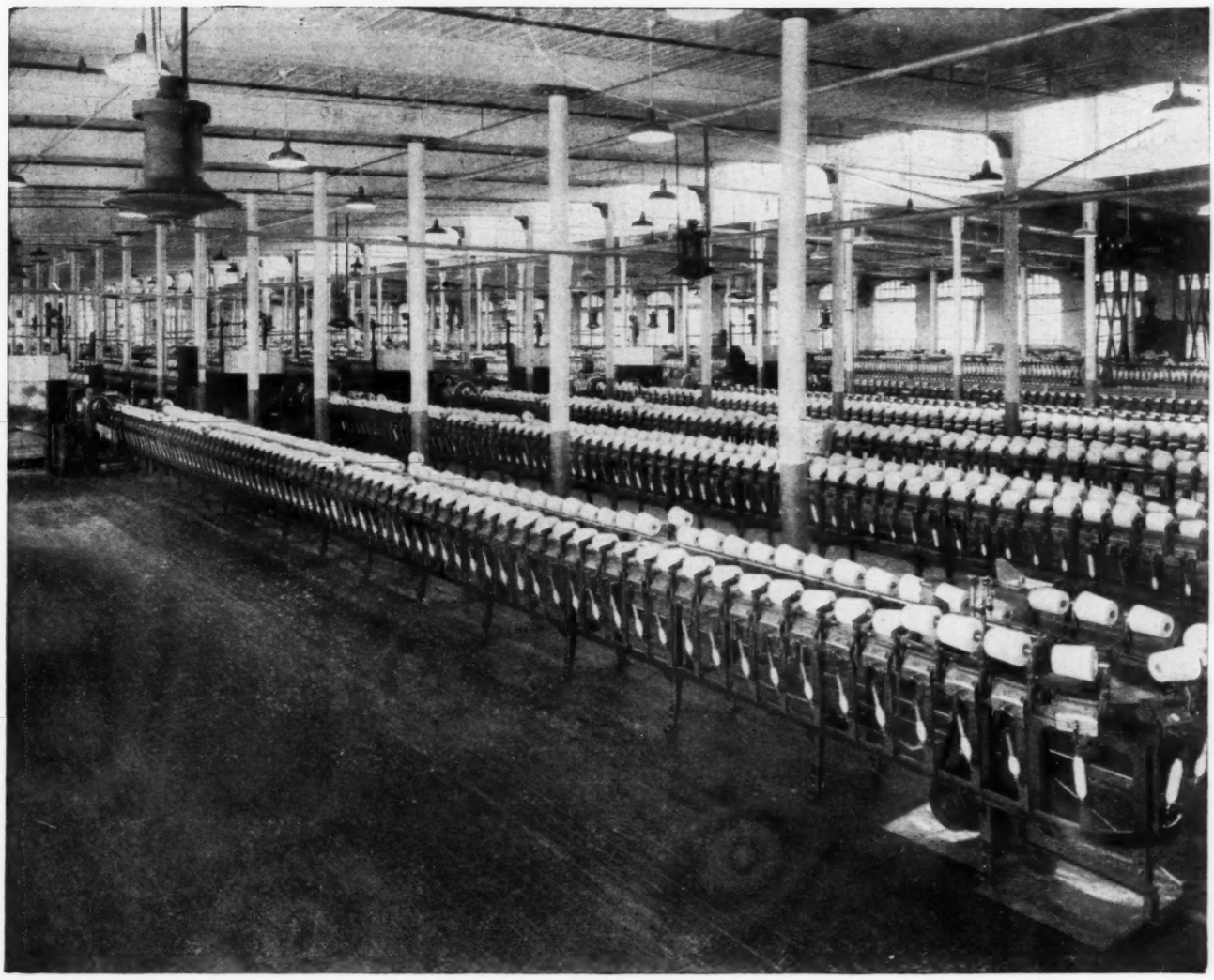
Keep an eagle eye on mill equipment that's being driven hard for war production. Alcoa engineers will gladly help you decide how to get maximum life from Aluminum Alloy equipment that can't be replaced because of priorities elsewhere.

Some of your Aluminum parts may have become scuffed or scratched in service; separator blades, bobbins, pirns, spools, stocking forms, drying rods and tubes. Polishing is probably all they need to make them good as new. It may be wise, however, to take a few at a time out of service to be given an Alumilite finish (process patented). This gives them a smooth, hard surface that is highly resistant to wear and corrosive attack.

Many knitting machine and loom parts, which would be replaced in normal times because of wear, can be rebushed or brought up to size by metallizing. Painting or cleaning and repainting hoods, ducts and housings will prolong their life. Whatever your problem, remember that Alcoa engineers are here to help you solve them.

ALUMINUM COMPANY OF AMERICA, 1939 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM



AUTOMATIC TRAVELING SPINDLE WINDING

KNITTING CONES ***DYE TUBES***
WARPING CONES ***TWISTING TUBES***

LABOR IS USUALLY REDUCED 65%

LARGE SAVINGS ALSO MADE IN HANDLING TO AND FROM WINDERS

BIG SIX POUND CHEESES IN TWISTER CREELS MAKE A FURTHER SAVING IN CREELING

AUTOMATIC WINDING IS NO LONGER A NOVELTY. IT IS STANDARD IN ALL PROGRESSIVE MILLS

LABOR FREED IN THE WINDING AND WARPING DEPARTMENT IS AVAILABLE FOR INCREASED PRODUCTION THROUGHOUT THE MILL

THIS EQUIPMENT IS MADE ONLY BY

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Representative. L. S. Ligon. Greenville, S. C.

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

The Right Start

A PRODUCT FOR EACH STEP IN RAYON MANUFACTURE

RAMOL W-1345—To prevent milky yarn in bright lustre viscose rayon.

•

LUMPOMIN Q—A quartenary ammonium compound for emulsification of mineral oil.

•

RAMOL W-1293—An emulsifier added in shredders.

•

RAMOL W-945 C—Non-oxidizing oil at 150°C; no development of acidity at 150°C.

•

RAMOL W-1407 DR—A knitting finish oil to be used as is or in emulsion.

•

RAMOL W-1395 DP—A base oil for mineral emulsions.

•

RAMOL W-530—A product for rayon throwing, used with gelatin or gelatin substitute, for weaving or throwing.

•

MONOPOLE OIL DP—Used for skein finishing.

•

AIR CONDITIONING ASSISTANT—Anion active, eliminates dust and soot by precipitation.

Special information on request.

• Steadfast cooperation between our research staff and our Customer Sales Service has enabled us to keep pace with the war demands of rayon producers and rayon users.

We invite you to make use of our trained technical experts to assist in solving any problems associated with rayon.

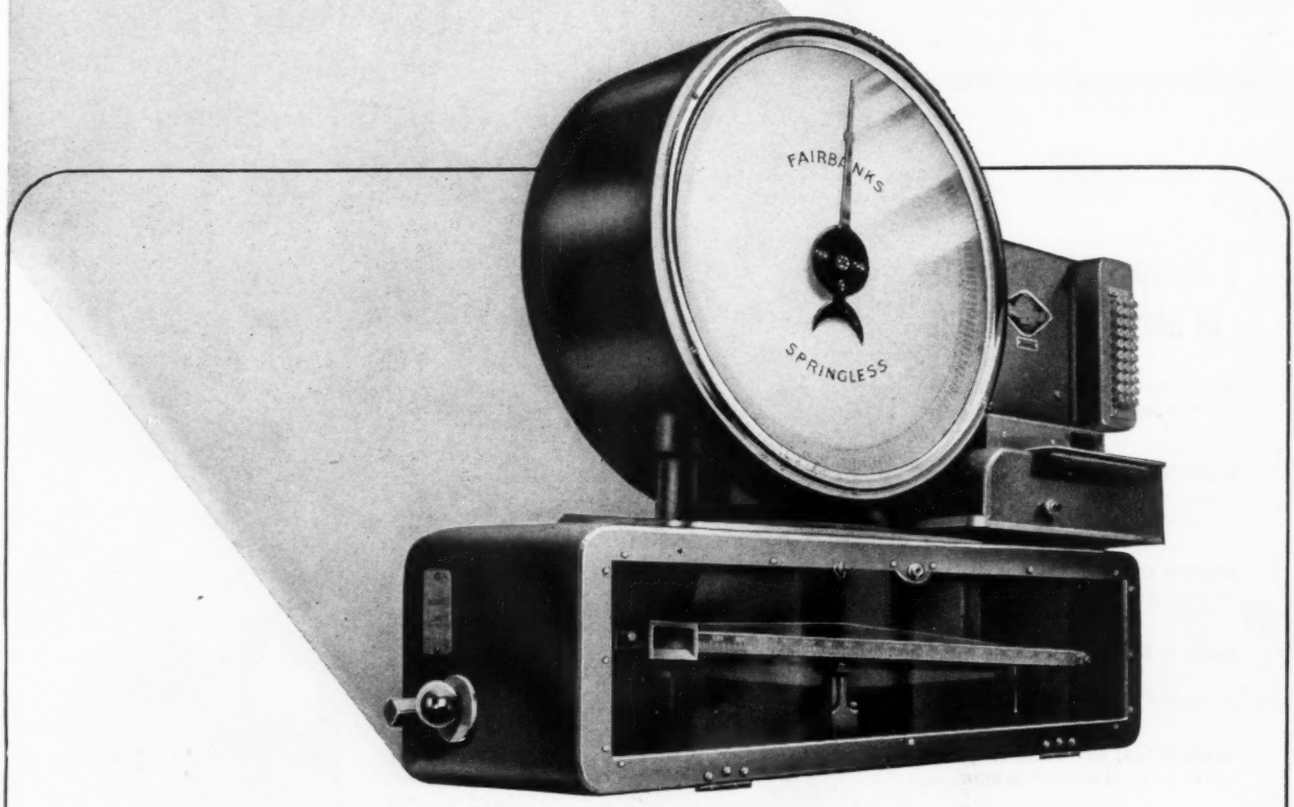
WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals **PASSAIC, N. J.**

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.

THESE SCALES HELP UPSET THE AXIS TIMETABLE!



THE speed and accuracy of modern Fairbanks Scales, and their many ingenious applications, are helping rush war matériel production.

Use your priority to get Fairbanks weighing equipment that will not only save precious minutes now but also serve you best in years to come.

Fairbanks scale engineers are ready to help you plan for today with an eye for tomorrow. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

FAIRBANKS-MORSE

FAIRBANKS SCALES

SCALES
DIESELS
MOTORS
PUMPS

Serving and Saving —WITH TUBIZE

A Timely Heading
Specific Merchandise
Style and Beauty
How to Save
Assurance of Service
Enlist this lingerie for your WAR ON WASTE
RAYON LINGERIE THAT'S PRACTICAL, THAT LASTS, THAT PUTS NO STRAIN ON YOUR WARTIME BUDGET
Velokyn Lingerie of Tubize Rayon Jersey
Petit Point Trimmed Dirndl Gown sizes 32-40...about 13
Bra-top, Side Midriff Slip sizes 32-44...about 12
For names of stores write to Sircom Knitting Co., 303 Fifth Ave., New York
These are days when everything has to last. Fine lingerie wears longer when given intelligent care. Follow these simple, time-saving, money-saving rules:
when buying
• DON'T BUY HURRIEDLY—take time to seek the qualities that stand for durability: knit fabric
• closely-knit fabric
• closely-proportioned styling for comfort
• well-proportioned fitting that won't pull when walking or sitting
• dainty yet strong seams that won't pull out or fray with normal wear
• don't buy garments too small—when in doubt about size, ask your saleslerk
when washing
• WASH AFTER EACH WEAR—gently and quickly in rich suds of a mild soap and lukewarm water
• squeeze suds through fabric—avoid hard rubbing and twisting
• rinse thoroughly—squeeze out excess moisture
• hang evenly over a smooth line or rod
• to dry—away from heat and sunlight
• if you wish to press, be sure the iron is at "low," heat—NEVER HOT—and press lightly on wrong side while garment is slightly damp
when mending
• KEEP A WELL STOCKED MENDING KIT—replete with fine needles and threads—ribbons and tapes
• mend each little tear and rip before it "runs," into a major task
• don't puncture the threads in fine fabrics with too-coarse needles
• keep your undies fresh and new looking by replacing worn shoulder straps—reinforcing frayed waistbands—with matching tapes or ribbon
The Tubize Certified Quality label sewn in the seam of your dresses or lingerie not only indicates that the fabric is made of Tubize Rayon but that it has been tested and is certified to be satisfactory in respect to strength, color and cleanability. Tubize Chatillon Corporation, manufacturers of Rayon Yarns and Fabrics, Two Park Avenue, New York City.
fashioned in TUBIZE certified quality RAYON
Pronounced "Too Bees"
One of a series of Tubize advertisements in Life, Good Housekeeping, Vogue, Mademoiselle and Glamour, that points to specific merchandise made of Tubize Rayon and identified by the Tubize Certified Quality Label. The simple hints on the care of garments are helping American women to save and serve.

As rayon plays a greater and greater part in clothing Civilian America, beauty and serviceability go hand in hand...beauty of fabric and garment to inspire morale...serviceability to insure long wear so necessary to war-time conservation. Tubize serves you who make and sell and those who wear serviceable, stylish, economical rayon...serves by upholding a known standard of quality—the Tubize label—and by educating the consumer in the care of fine fabrics made of Tubize Rayon.

TUBIZE CHATILLON CORPORATION ★ 2 PARK AVENUE, NEW YORK

Acetate and Viscose Rayon Yarns and Fabrics

---

fashioned in TUBIZE certified quality RAYON

The Tubize Certified Quality Label on your merchandise adds more than an extra sales stimulus...it adds an assurance to both merchant and consumer that the fabric is serviceable; that it has been tested and is certified for color, wear and cleanability...and this assurance has been constantly advertised both to consumer and the trade for years.

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HOLLOW SET SCREWS WITH THE

KNURLED POINTS

Apply this safeguard in *your* mill without delay. Wherever a set screw is subject to vibration, use an "Unbrako" Self-Locking Hollow Set Screw with the *Knurled* Point. Tightened in the usual way, the *knurled* point "digs in" and holds. Yet it can be backed out with a wrench and used again and again. Sizes from No. 4 to 1 ½" diameter. Deliveries are better than average. Write for Catalog giving complete information.

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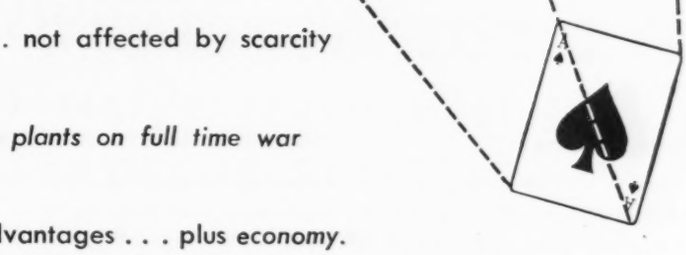

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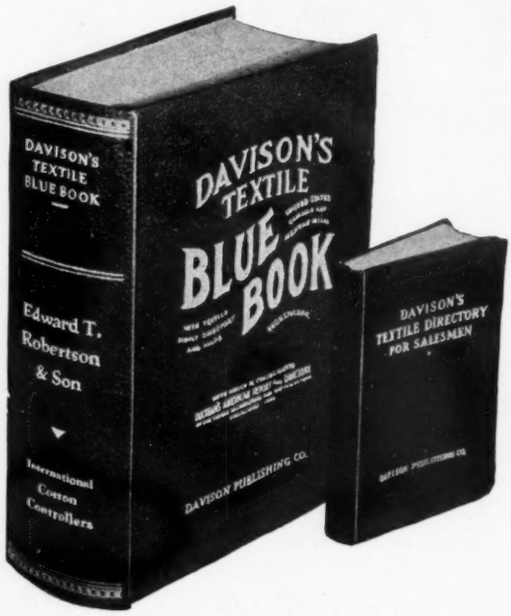
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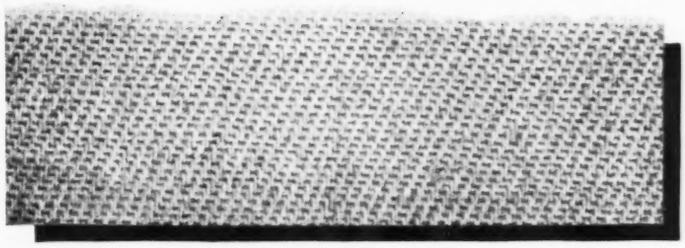

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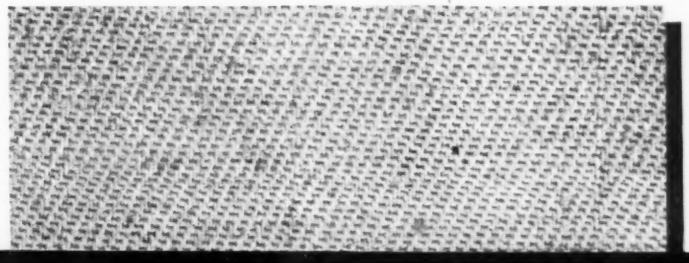

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Dear Pop:

Even an old Rainbow Divisioner like you would pop your eyes at the army we're putting together this time. Let me tell you, they're doing everything to make up just about the best bunch of fighting galoots you ever saw.

And that goes for what they do for us off duty, too! Take this new clubhouse we got just outside of camp. It's got radios, dance floors, nice soft chairs and everything. And, Pop, you can get something to eat that won't cost you a month's pay!

Now, the army isn't running this. The USO is. And most of the other camps got USO clubs too, because you and a lot of other folks dug down and gave the money to the USO last year.

But, Pop, you know what's happened since then. Guys've been streaming into uniform. Last year there was less than 2 million of us. This year there'll be 4 million. And the USO needs a lot more dough to serve that many men—around 32,000,000 bucks I hear.

Now, Pop, I know you upped with what you could last time. But it would sure be swell if you could dig into the old sock again. Maybe you could get some of the other folks in the neighborhood steamed up, too.

It will mean an awful lot to the fellows in camp all over the country. Sort of show 'em the homefolks are backing them up. And, Pop, an old soldier like you knows that's a mighty nice feeling for a fellow to have. See what you can do, huh, Pop?

Bill

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USO

Send your contribution to your local USO Committee or to National Headquarters, USO, Empire State Building, New York, N. Y.

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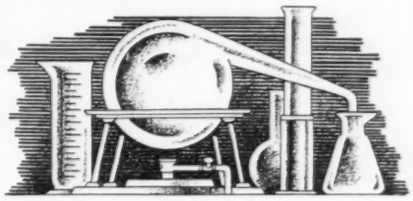

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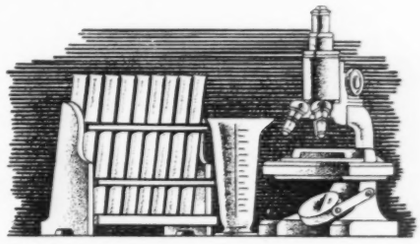

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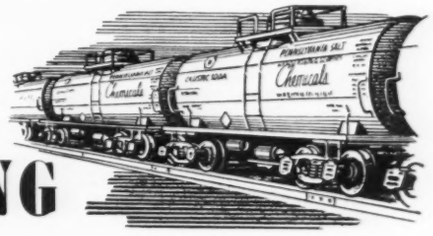

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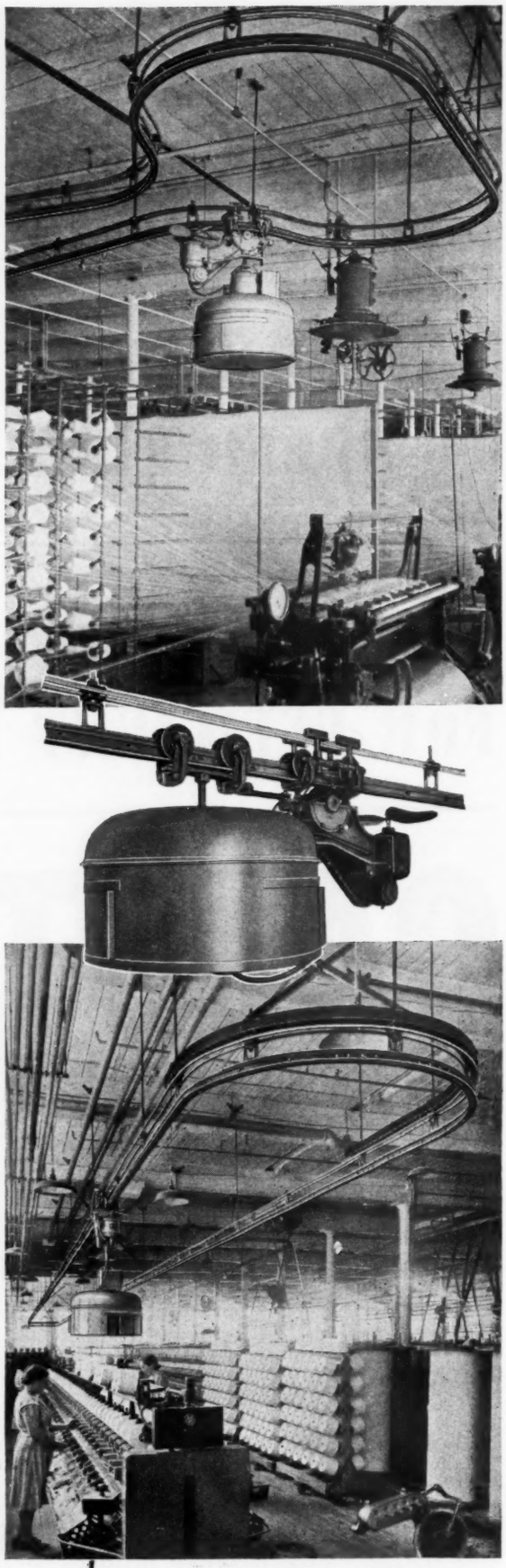
PERMITS OPERATORS TO HANDLE 20% TO 50% MORE LONG DRAFT SPINDLES

AUTOMATIC removal of lint by American MonoRail Cleaners offers many advantages when used with long draft spinning and high speed winding, twisting, spooling and warping machines.

Overhead cleaners cut down the amount of manual cleaning. They reduce hand cleaning of roving creels, wiping out of backs and running out of thread guides. They prevent accumulation on the ring rails or parts above them, thus reducing machine stoppage and enabling the spinners to tend more sides. Depending entirely upon conditions prevailing in the mill, hand cleaning is reduced to permit spinners to handle from 20% to 50% more long draft spindles.

With Cyclonic Cleaning you get better running work, fewer gouts and bunches, less ends down, lower cleaning costs, no lost production and fewer machine stoppages.

Competent engineers will show you how these results can be attained in your mill. A definite proposal will be offered without obligation.



Automatic cleaning for spinning, winding, twisting and warping machinery.

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13106 Athens Avenue — Cleveland, Ohio

SEPTEMBER, 1942
Volume 106 Number 9

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ATLANTA, GEORGIA

COTTON
SERVING THE
Textile Industries

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A highly efficient product for use as a general scouring and boil-off agent in textile wet processing. ★ Here is a new detergent that is active in hard or soft water. It may be used alone in the boil-off bath or as an addition to present soap scouring formulae with improved results.

● **LANITOL C W increases the detergent action of soap...and permits rapid and complete rinsing of stock, yarn or cloth.**

● **LANITOL C W is excellent for boiling off or scouring rayon hose prior to dyeing and finishing...including full-fashioned hosiery that is highly contaminated with knitting oil.**

● **LANITOL C W is highly valuable for washing off tops and yarn to remove oil and grease.**

● **LANITOL C W...when added to the final rinse water after scouring woolens...effectively removes all residual soap...leaves the cloth with a pleasing hand free from objectionable odors.**

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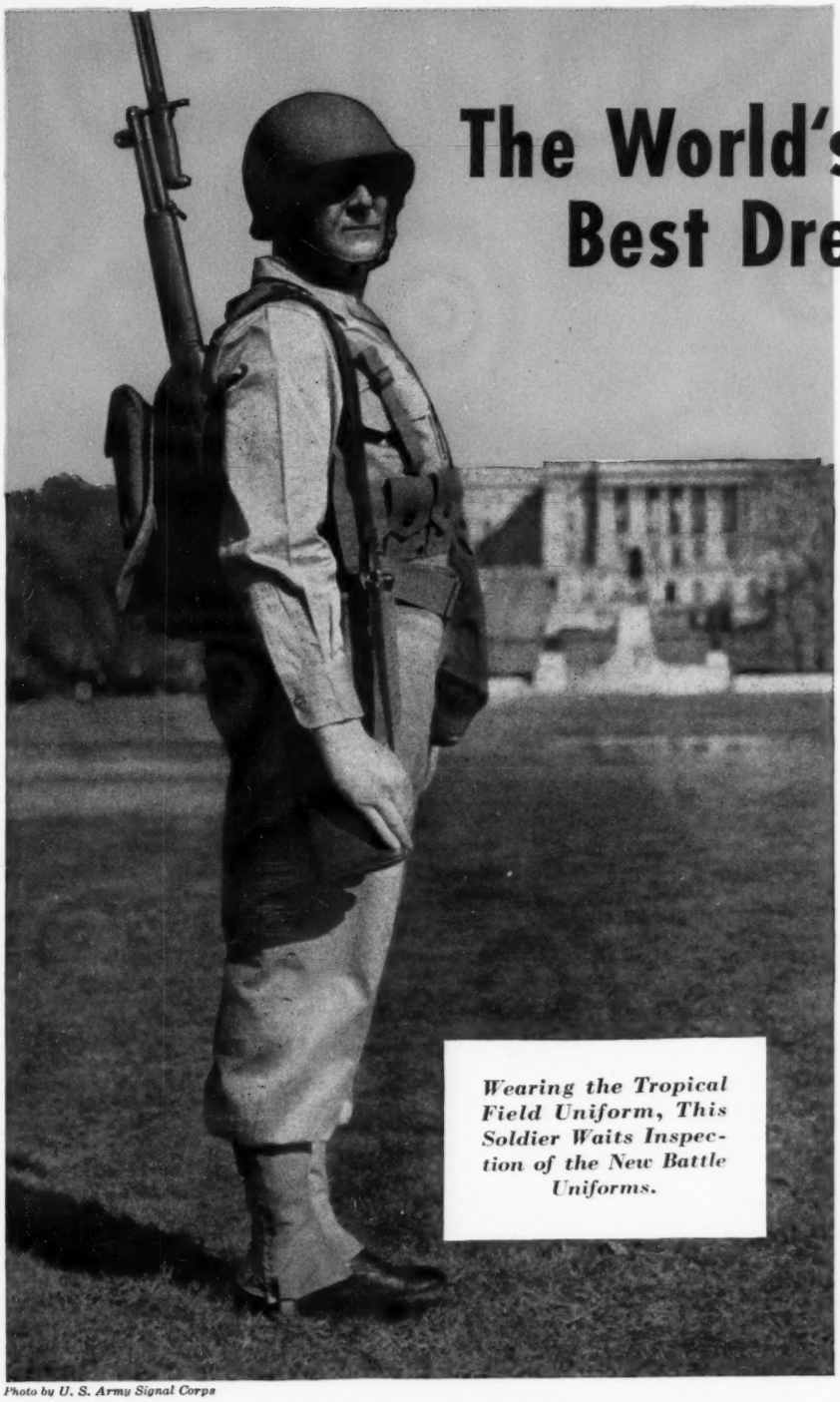

The World's Best Dressed Man—

Wearing the Tropical Field Uniform, This Soldier Waits Inspection of the New Battle Uniforms.

Photo by U. S. Army Signal Corps

Better than any other Civilian group, the Textile Industries well know how staggering, complex and efficient has been the job of making America's fighting men—the best dressed in the world. And to help make them so, the Textile Industries have assumed responsibility for producing, with amazing speed, the vast quantities of incredibly varied fabrics and uniform cloths required by our Armed Forces of land, sea and air.

This determination to "deliver the goods" in the typical American way has been an inspiration to all those who have cooperated with the Textile Industries in serving this great war production effort. As makers of Textile Products for spinning and weaving operations, Dayton is proud to be numbered among them.

In addition to serving the Textile Industries, Dayton's facilities and production experience are today being dedicated to the manufacture of special parts for Army and Navy Combat Equipment.

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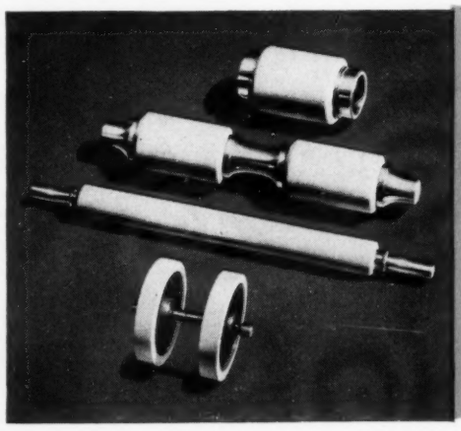

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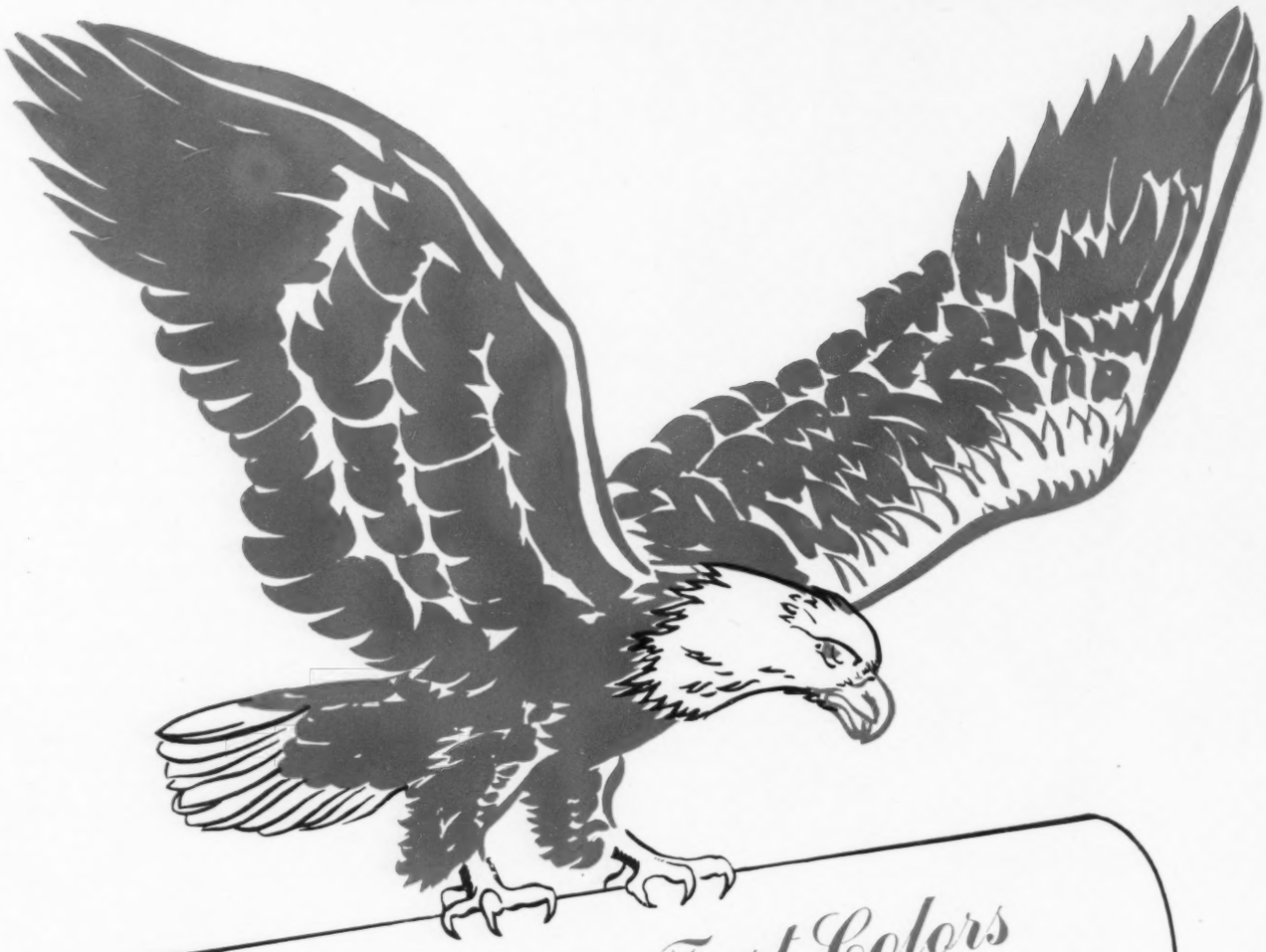

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SHORTS AND REMNANTS

Japan

One of the nightmares of a football coach is the fear of over-confidence and an attitude of underestimating the opponents that teams so easily develop. Not a season passes without its upsets with the favorite taking the other team too lightly. Generally speaking, we in America take a glance at the island territory of Japan, and wonder at the folly of a little fellow like that not only taking us on, but doing the attacking. This feeling is helped along by the small physical size of concept of the individual Japanese.

It might help our understanding of our opponents if we understand that, with their puppet state of Manchuoko, they outnumber us (1930 populations: Japan and Manchuoko, 132,521,834; U. S., 125,673,634). Also if you will think back not so many years ago, when disarming was the objective, this island kingdom withdrew from the discussions and upset the 5:5:3 Naval allotments of U. S., Great Britain and themselves because they were not content with the 3 end of the picture and desired to maintain a Navy at least equal to our own. Even ten years ago this little competitor had a standing army of over 2,000,000 as compared to our 400,000 or so. These figures are approximate because 1932 figures do not mean anything today, but up until we started in earnest on plane production, they held superiority over us in that division as well. Also they are fighting on their home grounds or at least much nearer than we. Don't underrate Hirohito's boys or figure on them as playing second fiddle to Adolf and his war machine. The war in the Pacific is a man-size affair, and only a good first team with some ball-toting can win it.

Fibers and Fiber Blending

"Just read the series of articles in the current [July] issue and want to congratulate you. . . . They accomplish a real purpose in bringing the practical and research points of view in the textile industry together."

MILTON HARRIS
National Bureau of Standards
Washington, D. C.

"I think you have done an excellent job in getting these men who really are experts in the field to give you such an excellent series of articles. . . . We always read the latest COTTON with interest. . . . "

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Rohm & Haas Co.
Philadelphia, Pa.

" . . . you have certainly done a good job. . . . "

RICHARD E. SUMNER
Calco Chemical Div.
American Cyanamid Co.
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" . . . We are naturally going to save these articles for our Technical Files."

GEORGE H. JOHNSON
General Manager,
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" . . . I thought this article ('A Review of Chemicals in the Textile Industry') was very good indeed. . . . "

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Chattanooga, Tenn.

" . . . We have read with interest the articles on fiber-blending and consider them a very fair presentation of a subject that requires a tremendous amount of study and presents a constantly changing picture."

WILLYS H. TAYLOR
President,
Newnan Cotton Mills,
Newnan, Georgia

"I want to congratulate you on a fine job in developing the subject of fibers."

CARL Z. DRAVES
General Dyestuff Corp.,
New York, N. Y.

"I think the series of articles on 'Textile Fibers and Fiber-Blending' is very well done. . . . We are going to have to go much further . . . the articles should draw attention to what will have to be done."

DR. R. E. ROSE
E. I. DuPont de Nemours & Co., Inc.
Wilmington, Del.

" . . . telling you how much I liked it and what a valuable contribution you have made with your section on special fibers and fiber-blending. . . . "

F. S. BLANCHARD
President,
Textile Research Institute,
New York, N. Y.

("Textile Fibers and Fiber-Blending" as presented in the July issue received many favorable comments. As a basic approach to an ever-changing subject that has occupied volumes, it is an issue that should be kept and used to stimulate further study. Additional copies upon request as long as our supply lasts. If you missed this one, let us know.)

◆

"Handling of Grievances"

"Please ship . . . 200 reprints of the splendid article entitled 'The Handling of Grievances' by W. M. McLaurine. . . . "

H. R. TURNER
Asst. Gen. Mgr.,
Dunean Mills,
Greenville, S. C.

◆

Selling Agent and Loom Motors

" . . . I would like very much to have these two articles ["Requirements of a Loom Motor"] and a copy of the third one which appeared in the June issue. . .. "

JOHN J. McCARTHY
J. P. Stevens & Co.,
New York, N. Y.

Rayon Finishing

"We followed with interest your articles regarding Modern Rayon Finishing. Accordingly, we were so very much surprised to miss this discussion in your July issue. . . . "

STUART BONE
Arthur Bone, Inc.,
Los Angeles, Calif.

(July was so filled with Fibers and Fiber-Blending that we had to postpone until August the next insertion of this interesting series which is now going strong again.)

◆

Costing, Accounting, Etc.

"I have just read your very interesting April number. . . . Could you recommend to me a very good and comprehensive book about costing, accounting, etc.?"

ARTHUR ORZEL
Inca Cotton Mill Co.,
Lima, Peru, S. A.

◆

After-the-War Advertising

"It's hard to plan for peace in time of war—but it's good business." Thus ran the heading in the August advertisement for Scott & Williams, Inc., manufacturer of seamless knittng machines. Advertisers who are interested in a real down-to-earth approach to after-the-war problems will find this ad in our August issue of interest. We understand there are more to come. This copy should appeal to an industry sorely beset by problems of fibers and with plenty of need for looking ahead.

Orchids to Scott & Willams, Inc., and to Hazard Advertising Corp., who prepared this advertising.

If you have an idea that the collecting a starch salesman does is limited to lint, dirty stories and all the money in the textile business, take a glance at the picture of Luther Knowles, of Clinton Co., which recently appeared in the "Charlotte Observer". In addition to being one of the best known and liked purveyors of textile starches, Luther makes a hobby of collecting ash trays, not of the hotel lobby variety, and definitely not for ashes, as he has 200 china trays with china pipes attached (exeept for one with a china cigar). Maybe the jugs are just for variety.

Rush Government Orders Won't Permit Delays

These rush orders from the Army and Navy—for duck and khaki, toweling and sheeting, and dozens of other fabrics needed to outfit our rapidly expanding armed forces—won't wait for delays.

Cotton mills with urgent war contracts in production have to make every machine count. There's no time for shut-downs caused by power plant failure.

In wartime especially, superintendents and operating managers appreciate the dependability of their central station power service.

They count on the continuity of their central station power, on its flexibility, on its adaptability to varying loads and new production processes. They want a power supply that will *produce*--- 24 hours a day.

The men who are responsible for getting the work out know the value of reliable central station power supply.

GEORGIA POWER COMPANY

COTTON
SERVING THE
Textile Industries

Vol. 106 September 1942 No. 9

If We Fight with All Our Might

THE ANCIENT Greeks were good fighters, but seldom engaged in any military enterprise without consulting one or more oracles to see if the prospects were good. On one occasion the Athenian War Department appealed to the Delphic Oracle for advice and was told that the Athenians would win the war "if they fought with all their might". They did, and they won. It was good advice, and is as good today as it was then.

The United States contains six per cent of the world's area and seven per cent of its population, yet it has created about half of the world's wealth and produces more than one-half of the world's foodstuffs and mines more than half of the world's minerals. It normally consumes one-half of the world's coffee; more than half of its tin and rubber; about one-fourth of its sugar; three-fourths of its silk; one-third of its coal and copper; nearly half of its pig iron and steel, and two-thirds of its crude petroleum.

The United States operates 60 per cent of the world's telephone and telegraph facilities; owns 80 per cent of the motor cars in use; operates 33 per cent of the railroads; produces 60 per cent of the wheat and cotton, and spends more for educational purposes than all the other countries of the world combined.

The United States possesses more than half of the world's monetary gold. It has two-thirds of civilization's banking resources. The purchasing power of its people is greater than that of 500 million people of Europe and much greater than that of more than a billion people in Asia.

All of this accumulation of wealth and potential military might is no accident; no chance happening due alone to fortunate circumstances. Although we produce half of the world's agricultural products, other lands have soil as rich and acres as broad as our own. While we take from the earth half of the mineral wealth produced in the world, we have no monopoly of mineral resources. Under the heedless feet of countless billions of people have lain mineral treasures equal to, or surpassing, anything we have in this country. But we have taken ours out and used them, where others let theirs lie. It is no accident that the United States develops more mechanical power than all the rest of the world put together. All of these marvelous accomplishments have been made by free men working under a system of free economy, and spurred on by the powerful incentive of personal gain—by the knowledge that harnessing the forces of nature and turning its raw materials into useful goods would make their own lives and those of their children brighter, happier and more comfortable.

OUR ENEMIES in the totalitarian countries profess contempt for freedom of person or thought or action. They are determined to destroy freedom wherever they find it, and they hate the United States particularly because here, as no other place on earth, has man flourished and prospered by being free spiritually, bodily and economically. Our enemies have copied our methods which have wrought our miracles of peace, and have applied these methods to the production of implements of war. The cunning, treacherous and imitative Japanese have studied our industrial methods attentively for 50 years or more. Between 1920 and 1925, the Japanese purchased great quantities of machinery in the United States, and as a condition of each purchase they stipulated that the factory making the machinery should admit Japanese engineers and inspectors, ostensibly to see that the standards imposed by the specifications were maintained. Actually, these were merely industrial spies who swarmed in droves through our manufacturing plants learning our methods. There might be as high as five of these phoney "engineers" detailed to watch the manufacture of a spinning frame. The duty of one was to study and memorize everything he could about the manufacture of the spindles. Another devoted his entire attention to the frame and bearing assemblies; another specialized in the manufacture of the rolls, and so on. When they got back to Japan and pooled the collective results of their espionage, they were prepared to build their own textile equipment. They have pursued the same practices with regard to airplanes, automotive equipment and everything else that we make.

The Germans sent numerous missions to the United States to study our automotive industry and learn the secrets of our mass production, by which an American factory paying more than twice the wages paid in a German factory was still able to compete in foreign countries with certain equipment

in which the United States had been preeminent. Both Japan and Germany have turned this knowledge to military account. They have been preparing for years to attack us and have used our own manufacturing methods in their preparations.

To beat them we must indeed fight with all our might, with every resource at our command; must devise new and ingenious methods of manufacturing more and better armament than can be found anywhere else in the world. We can do it if we try. When Germany and Japan declared a mechanized war against the most highly mechanized nation on earth, with the greatest capacity for producing metals and the things made out of metal, they were moving right up our alley, and it is up to us to see that for them it is a blind alley, from which they must not be allowed to escape in one piece. This mechanized war business is our dish; we can eat it up. They got the jump on us and we had very little experience making guns and tanks and fighter planes and bombers and a thousand other things that Hitler and his yellow friends have always considered more important than food and clothes and furniture and automobiles and household comforts. They knew more about making this sort of stuff a year ago than we did, but we learn fast when we try. We have not been a great ship-building nation since the days of steel ships, since our high wage scales for maritime workers have put us at a sharp disadvantage in meeting foreign competition, but now with a little practice we are building ships in 45 days that used to take six months, and we expect to be knocking out one of these in 32 days in a few months.

We have never been manufacturers of big guns in any quantities, but we are turning them out now like we used to turn out automobiles, fast and good. But as the Office of War Information recently stated, we are as yet only ankle-deep in this war, and we have got to be neck deep before we win it. In the United States—united as never before in a common purpose—we have the world's greatest accumulation of material with which to fight. We have got what it takes if we will use it. If we fight with all our might we cannot lose.

We are not yet fighting with all our might, nor with anywhere near it. We are still in the honeymoon stage of the war, with warehouses recently crammed with consumer goods manufactured during the tremendously productive year of 1941 and a golden flood of purchasing power sweeping in a torrent out of the Federal Treasury.

The honeymoon will soon be over, and living on a realistic budget must begin. The accumulated stocks of consumer goods are now rapidly disappearing from the warehouses, and there is no way to replace them. When they are gone we must learn to get along with less. We will probably soon be rationing clothing and may have to ration certain foods in addition to sugar. Hundreds of things that we considered necessities will simply not be obtainable at all. With less to buy and more to buy with, we have inflation. If inflation gets out of control, we lose the war. We cannot fight with all our might if this might is sapped by the domestic suffering and disorganization that follows inflation.

Stand on a street corner in almost any city and watch the cars go by. There are few less than a year ago, and it is a good bet that at least half of them are carrying only one person. It is unavoidable for a single person to take an auto trip at times, but half of the people driving alone in cars is too many. The thoughtless housewife still pours enough waste grease down the drain every day to load the cartridges to kill a dozen of our enemies, and burns up in the incinerator enough waste paper to make the boxes to carry these cartridges to the fighting front. The mill hand signs up to put 10 per cent of his pay into War Bonds, and then joins the line at the post-office window to cash in the bonds as soon as he can. The over-paid workman makes as much in three days as he used to make in five or six, and works three days and loafs the rest of the week.

Our steel mills lag for lack of scrap, while millions of tons of it lie abandoned in farms and city back yards and basements. A trip through the country shows hundreds of automobile boneyards which somebody ought to turn into junk, but doesn't. In many of these boneyards the old tires are still on the cars.

A cotton mill finds it almost impossible to get motors or other electrical equipment on account of the shortage of copper, yet we pay skilled miners to mine silver that the Treasury doesn't want and hasn't any use for, but buys at twice what it would pay for the silver elsewhere if it needed any.

The sooner and more completely we throw the full might of this incredibly powerful country into the war, the sooner we can go about the business of peace again and turn this same industrial might to the further bettering of our standard of living, which has risen persistently, if interruptedly. The more we lack of fighting with all our might, the longer the war will last and the greater the hardships we must endure and the harder the final road back to prosperity.

A Thought for Taxpayers

We cannot repeat too often or emphasize too strongly the fact that you cannot tax a man who works for the Government. You can say you tax him, but you can't, because you can't tax a tax. If he works for the Government all of his income comes from taxes, and any attempted tax on his income becomes merely a kick-back, or reduction in pay, and cannot be a real tax. It would be the same as a corporation offering to pay a man $50.00 a week on a certain job, but stipulating that he would only get $40.00. A corporation could probably not get by with anything as ridiculous as this. The Government goes through the motions of taxing those who work for it merely as a matter of public policy, to keep the rest of the people from claiming that Government employees are favored. The Government only goes through the motions, however, and it is the rest of the people who pay the taxes.

All of the taxes to pay for everything have to be paid out of civilian income, and don't ever think that it can be otherwise.

TRAINING MILL WORKERS

By Allen Jones

General Superintendent, Muscogee Mfg. Company

THE KEY to America's production effort is the machine, and the key to the machine is the trained man.

Over two million men were addcases, however, an entirely special motor may be desired. If the reed by the defense industries in 1940; twice that many were added last year; and over ten million will be needed by the spring of 1943. That is our national problem today. Whether each industry does its part will determine whether the program is met. It will have to be an all-out effort, enlisting the support of everyone. And besides the plans and organization, there will have to be enthusiasm. Emerson said, "Nothing great was ever achieved without enthusiasm."

We need to put some of the spirit into the program that we show in developing our football teams, that salesmen exhibit in exceeding their quotas, and that the line organization shows when it turns out more goods than was expected of it.

Training workers is not the job of the instructors; it can only be put across when the whole organization is not only behind it, but with it, from the top-ranking executive down through the line.

Choosing the best method of training and supplying the instructors with all of their material needs is essential, but the proper choice of instructors, grounding them in the fundamentals of teaching, and keeping them enthused by our moral support and our active help are the main points which make the program a success.

There must be more than the desire to do a day's work instilled in the teachers. They must realize that training men has risen to be one of the most important phases of industry, and that production will bog down unless they show some of the grit and determination of the boys on the gridirons. Theirs is a task that requires the best that is in them, their brains, their skill, their patience, and their staying qualities, for there will be no cheering grandstands to spur them on.

They will have to put some of their enthusiasm into the men being trained so that they will take hold of their jobs with the idea of doing a patriotic duty. There is still a lot of the fire of the early settlers in our young men today, but it has to be aroused and brought out. Many of them are showing it in the various branches of the service today, but many others can serve their country just as well in turning out the arms and materials that these men need.

Our training programs are giving us the opportunity of developing real morale if we will just avail ourselves of the chance. America needs the products of industry today; we have the glorious privilege of molding the men who can make it possible.

Fortunately there are several sources of training already set up which can be used in the program. *First:* the trades schools which have been a source of material for a long time. They have taken ambitious men and boys and have taught them the rudiments of the skilled mechanical trades, not only the actual work of hand and machine craftsmanship but also such technical knowledge as was necessary as a basis for developing later thorough insights into their occupations. Generally they have turned out men who have working abilities in all the hand and machine processes of these skilled trades. This has been very helpful when these pupils apply for jobs in shops and in their progress once they get started in industry.

This plan has worked well, but is inadequate to the dire need for such all-around skilled men. We should have many more such trade schools. The thoughtless argument is advanced that the training of a given individual in these general trade schools, now in view of the war emergency, should be confined to one type of machine, so that the men can be taken into the shop and start production work at the earliest possible time. I disagree completely with this point of view, even if these general trade schools were equipped for training for specialized machine production industries, which they are not. To be sure we need specialized machine operators. But we need all-around craftsmen far more.

The *second* source of partially trained men is local vocational extension classes conducted in trade school and industrial high school shops at all hours of the day and night when these shops are not in use by the regular trade and high school pupils. These classes are for employed or unemployed adults who wish to learn a skilled occupation or a portion of one. In our town they are taught blue print reading, welding, machine shop practice, auto mechanics, electrical maintenance, and sheet metal work. We have also a downtown vocational school which serves people who need additional general education and those who wish to take commercial subjects. Besides these, there are classes in power sewing, dress making, home hygiene, care of the sick, and some shop subjects as wood and sheet metal work.

So before taking up training in the factory, it is well to see whether your community is doing all it can in preparing employees for industry. So much time can be saved, so much better progress made if only the new men have had the

A companion article by Mr. Jones, on the subject of "Training Supervisors", appeared on page 67 of the August issue of COTTON. Both are adaptations of addresses delivered by him at an industrial relations conference at Oklahoma A. and M. College, Stillwater, Oklahoma, sponsored by the college's division of engineering and division of commerce in co-operation with the state department of vocational education.—THE EDITOR.

rough edges knocked off of them and are industry-minded when they start.

Most factories have had some form of employee training which has been spasmodic—depending on the level of business. Many factories have had well-organized programs when business was good and skilled help was especially short, little training at all when dull times slowed things down and it was easier to hire good help.

The "Training-within-Industry" program which has been given such wide recognition and which has accomplished so much in industry is based on the quick training of a man to do a particular job. It requires the breaking down of the skilled jobs into component parts and the training of a man to do each one. Such training on the job in industry—not in a trade school—always has been and always will be the source of the specific skills of the operative in mass production machine industry.

Some one has said that "A skilled mechanic is a collection of specialists all wrapped up in one man". We cannot expect to turn out skilled mechanics in the short time available but we can train specialists to do a specific job. When they have become proficient it is easy to switch them over to other jobs just a little more difficult, and bring up others to take their places. This creates interest and stimulates ambition to learn even more skilled jobs. But some one has to train these men. The best way to do this is to enlist the active support and co-operation of the older skilled men in the actual training of the new man.

They and they only know the "knacks" and the "Do's and Don't's"—the inside things about the jobs that only years of experience could have given them. Being men who have learned it the hard way, they will naturally be reluctant to pass this on to younger men who might take over their jobs when the emergency is over.

Here, again, is where enthusiasm will be needed. Some appeal will have to be made to these men to enter whole-heartedly into the program. Some will do so if given a chance to learn higher skilled jobs, some can be moved by loyalty to the company, and some by an appeal to their patriotism. This is the same spirit that Lord Nelson called for at the Battle of Trafalgar, "England expects every man to do his duty."

"They will have to put some of their enthusiasm into the men being trained so that they will take hold of their jobs with the idea of doing a patriotic duty—to stop Hitler."

There is one phase of training on the job which requires more than what just one man can tell or show another. This is the maintenance of the modern high speed machines. Learning to operate a machine is only a matter of understanding what is required to turn out the product and by sheer experience, doing it skillfully. Learning to keep the machine in good operating condition, understanding its intricate mechanisms and keeping them properly timed is a much more difficult job to be mastered and much more time is required in training.

We experienced this in our own plant a few years ago when we put on a modernization program. Man-to-man training broke down. Not often can mechanics teach others because good mechanics are usually, unless specially trained in teaching, not good instructors. Successful foremen, of course, who have come up as mechanics, are excellent instructors. Good mechanics know how to fix the machines, but as this learning has come to them over a period of time, some of which they have hit upon by chance, they have difficulty in putting themselves down to the plane of intelligence of the learner and starting with the basic fundamentals. They may have learned the "Why" but they endeavor to impart knowledge by telling the "How".

Failing in this line, we next tried using young college graduates whom we had coached in the operations of the machines and who had been advanced to the lower grades of supervisors. The trouble with them was that they thought so much faster than the students and pre-supposed a greater general knowledge than the learners had. They frequently showed up their own lack of some of the fine points of operation that only the skilled mechanics had.

We were thus forced to organize vocational classes. Using the *Standard Textile Vocational School Courses of Study* as a starting point we adapted them to the people, machines and processes in our mill. With all the available instructional outlines, handbooks, and textbooks as points of departure, we analyzed and composed most of our own instructional material. This has been a tremendous task as can be seen from the following:

A group of supervisors, comprising both practically-trained and college-educated men met once a week, and starting at the fundamentals, set up certain standards. They would try out these standards the following week, and compare notes at the next meeting. Of course, there were changes in the early subject matter and methods of instruction, but having once mastered the best system of analyzing the training content of jobs, of determining standards for training, of setting up instruction methods, they began to make progress. Starting with one class the first year, these classes have been extended to all departments. Today 40 per cent of the men in the mill are enrolled in them.

Not only have the vocational classes been our principal source of skilled mechanics, but the vocational classes always offer something to be learned by anybody who starts to work in the plant and has ambition to advance. Men are trained for all the intermediate jobs from the lowest to the highest. When a shortage of semi-skilled labor occurs in some department, there are al-

ways men, who may not be quite ready, but who can be trained quickly on the job, primarily because of the vocational classes.

All of the instructors in these classes are supervisors in the mill. Most of them have a practical man as an assistant. One of the most important results has been the improvement of the instructors in their daily work in the mill. The technical knowledge which they have had to master so that they could teach has given them confidence in themselves. And the principles of teaching which they have had to learn have improved their supervision on their jobs. Then, too, having some of their men in their classes has made it easier to direct them on their jobs. We feel that we could not have met the emergencies which have arisen due to extra shifts and increased production if we had not had the classes in operation.

These classes are operated under the Smith-Hughes Law by the local public schools with the assistance of the State Board for Vocational Education. The teachers' salaries are paid by the local schools. The State Board for Vocational Education re-imburses the local schools with federal and state funds. During their class teaching time, the instructors are amenable to the local school authorities only.

Such vocational classes must comply fully with the strict, but necessary and all-around wholesome policies of the U. S. Commissioner of Education and the State Board for Vocational Education. Indeed, *far-seeing* self-interest in labor relations ought to make any factory interested in seeing these policies prevail.

So far, I have talked about sources of training and the general methods involved. I have merely touched on the most vital part of the whole program — industrial teaching — the actual transference of one man's knowledge and skill to another. As most plants have not had a regular training program nor seasoned teachers, I want to say something about teaching in general, quoting from Albert Walton:

"In the first place, there is a lot of difference between teaching and learning. One of the first things the new teacher is likely to overlook in his efforts to train a new man is that the man has to do the learning; that it is an active and not a passive process. The teacher feels that if he tells him what to do, shows him how to do it, and then gives him a demonstration, the desired learning takes place, provided the student has a fair degree of intelligence and common sense. Unfortunately this is not all there is to the process. All you can do is to remove as many of the difficulties as possible which stand in the way of his learning. Teaching is merely a guide to aid the process of learning. A man gets very little of what he is told. Mere repetition of instructions is not enough to insure learning. There must be an intent to learn, and the teacher's duty is to see that this interest is implanted as part of the preliminary instruction".

Teaching is an old profession, one that has its steps and methods just the same as any other profession or trade. There are at least three steps in teaching. Quoting from the industrial teacher training material used by Georgia School of Technology in training our supervisors to teach: "First, the *Preparation* of the learner's mind for receiving the subject matter to be learned. This is done by getting his mind off other matters and focused on the ideas the instructor wants him to be thinking about, then leading the learner up to the point where he knows exactly what he is about to learn and is anxious to learn it. Second, the *Presentation* to the learner of the subject matter through keeping his mind concentrated on only the new ideas essential for him to grasp in order to learn the lesson, and presenting only as many ideas as the learner's mind can grasp before applying them. Experience has shown that it is almost impossible for any one's mind to grasp more than about six new ideas before applying them. Third, the *Application* by the learner of the new ideas to the problems in the lesson, i.e., performing it as many times and to as many situations as is necessary for the instructor to assure himself, that the learner, unaided, can apply the new ideas to any situation and can do it as efficiently as expected."

Someone has said that "A skilled mechanic is a collection of specialists all wrapped up in one man."

This discussion of the Preparation, Presentation, and Application may appear academic and far afield from industrial training, but it is exactly what happens every time anyone tries to teach another. Our problem today is to see that these three steps are carried out correctly, even though the man in the mill has never heard of these high-sounding names, and little realizes that he follows these steps, even when he is teaching a man to operate a lathe.

After the instruction has been given and the learner apparently knows how to operate his machine, do not turn him loose till his self confidence has been built up. This applies to old men learning to operate more intricate machines as well as the man on his first one. Both have the same fear of falling down on the job. The teacher must have patience, tact and be a good judge of human nature. Each man must be studied and started out on his own at the right time.

The job is not done even then and the responsibility of the teacher has not ended. Every one who has operated machinery knows how many things can come up, about which no instruction has been given. The new man may have a hesitancy about asking for help, for he may feel that he should know how to correct it.

The instructor should not only come around frequently to iron out these difficulties, but should explain to the man that such things are to be expected and that no course of

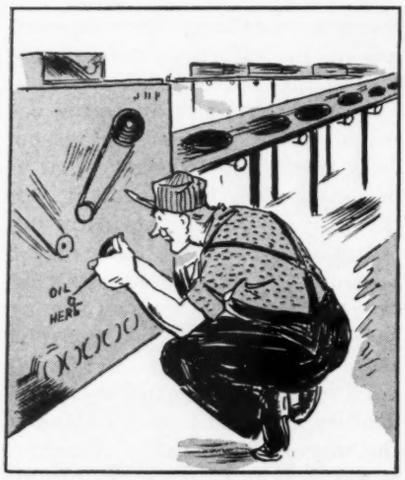
instruction could possibly cover all of them.

In addition to this regular "follow-up", older men on nearby machines should look over groups of new men, encouraging them when needed, straightening out problems, and periodically reporting to the instructor on the progress being made by each one. This practice of "follow-up" breaks up bad practices as they crop up and before they become strongly-fixed bad habits. It puts the finishing touches on the job of training.

After the training, then what? The real job comes next—the amalgamation of all the new workers into the organization; instilling into the new men the proper attitudes toward their work, the other workers, and the company; making them feel that they are a real part of things and their work is vital. Morale may either make or break a company and it will take the wholehearted co-operation of all of the line organization to build it up right.

It is perfectly natural for men coming from many different places, and from other jobs to bring their prejudices into the mill with them. Everything that happens to them in the plant influences them one way or the other. There is need for thought, plans, and action to receive these men and start them right. The original reception by the employment department is a guide as to what they are to expect. The way they are handled when they are placed on their first jobs; whether the supervisor acquaints them with those around them; and his attitude in giving them job instructions, safety pointers, and such necessary facts as location of tools, materials, dressing room, and drinking water — all these matters influence the new man and start his mental processes to work. He is either going to like his job, or is biased against it—and us.

In most large industrial centers, the housing problem is acute, houses are scarce, and rents are rising. Large companies handle this perplexing problem for newcomers, but there are many smaller ones that do not. Another problem is the adjusting of the home life to the life in the large towns. So many have come from farms or small places, where their local churches and wide circle of friends have meant so much to them.



"There is one phase of training on the job which requires more than what just one man can tell or show another. This is the maintenance of the modern high-speed machine."

Without some agency to assist in the adjustment of the family life, some guiding influence to help in filling up the leisure hours, many good prospects become dissatisfied with their work and leave, and that much training has been lost to that plant.

One other phase of training is the proper guidance of the young man who is just starting work. Probably just out of high school or away from home for the first time, the newness of the work and the jingle of his first real money encourage him to step out and see things. Here is a golden opportunity for a sympathizing supervisor to gain his confidence and steady him, pointing out others who have started out just like him, and by right living and hard work, have made successes. Just while he is seeing the advantage of his own training by increased pay and personal prestige is the time to interest him in his own life's plan. Having found out what he wants to do, and along what lines he wants to progress, some program for self improvement can be worked out.

People are people everywhere and the proper methods of training are universal. The problem before us all is training workers. America's need of the hour—and always—is for more skilled men. To gain this objective, we must put our whole hearts into it.

Six Months' Rayon Yarn Production Substantially Above 1941

Production of rayon yarn by American mills aggregated 234,700,000 pounds in the first half of 1942 as compared with an output of 218,200,000 pounds reported for the corresponding 1941 period, a gain of 16,500,000 pounds, according to figures compiled by the *Rayon Organon*, published by the Textile Economics Bureau, Inc.

Second-quarter rayon yarn production aggregates 117,600,000 pounds, the second largest quarterly production on record and only slightly below the all-time record of 118,800,000 pounds produced in the final quarter of 1941. Production in the first quarter of 1942 amounted to 117,100,000 pounds and in the second quarter of 1941 output totaled 112,000,000 pounds.

For the quarter ended June 30, 1942, the production of viscose-cuprammonium yarn amounted to 76,900,000 pounds, a new all-time high quarterly total. This new record exceeded the previous high of 75,700,000 pounds produced in the last quarter of 1941 by 2 per cent. The acetate division of the industry, however, registered a decline in output to 40,700,000 pounds as compared with a production of 41,900,000 pounds produced in the first quarter of 1942 and a quarterly record total of 43,100,000 pounds produced in the last quarter of 1941. The chief reason for this loss in poundage is the continuation of the progressive reduction in the average denier size of acetate yarn spun.

Deliveries of rayon filament yarn to domestic consumers totaled 39,900,000 pounds in July as against 38,900,000 pounds in June and 39,400,000 pounds in July 1941. For the seven months ended July, shipments totaled 271,300,000 pounds as compared with 258,600,000 pounds shipped in the corresponding period of 1941. Stocks of rayon filament yarn in hands of producers totaled 6,700,000 pounds on July 31 against 7,000,000 pounds at the end of June.

Staple fiber deliveries for July totaled 12,600,000 pounds as compared with 13,700,000 pounds in June and 12,600,000 pounds in July 1941 and stocks aggregated 3,200,000 pounds on July 31 against 2,300,000 pounds on June 30. Shipments for the seven months ended July 31 aggregated 88,400,000 pounds as compared with 76,700,000 pounds shipped in the corresponding period last year.

INDUSTRIAL RELATIONS *Versus* "Welfare Work"

By W. M. McLaurine

Secretary-Treasurer, American Cotton Manufacturers Association

IT IS THE thought of many people that welfare work as a means and as an end in social building in industry has performed a powerful and constructive uplift, but in this present period it has spent its day of usefulness and should be gradually eliminated and replaced by a program of industrial relations.

Welfare work in its most extreme form is pure paternalism. It is a program which superimposes its principles and policies on the industrial group whether they like it or not. It is a one-sided program in its organization and enactment. It is the fatherly care of people who are unable to care for themselves. It has had its day and function but many people think that a welfare program as such has been, or should be, outmoded. Its implications, in this modern day of social sensitivity, are bad. Social independence and the dignity and value of human personality have caused many workers to feel that they are no longer wards to be watched and coddled. They feel that they have grown up and are able to care for themselves.

This marks the turn of thinking in terms of welfare to a program of industrial relations. It is the adolescent pulling at the strings of too much home supervision and a desire to try out his own awakening powers. He wants his father to quit buying things for him. He wants the money and the privilege of spending it. He wants more freedom and a change in the fatherly attitude. You have heard the expression, "I am no longer a child, I am a man and want to be treated as such." Such an expression represents the social phase of industry today.

Industrial relations is no pronounced change from the program of welfare. It is a gradual change from the attitude of paternity and personal care—the idea of the father-and-child—to that of fraternity or the idea of man's relationships to his fellowman. It is just a little difficult to pull these two ideas apart and make definite distinctions, yet a study on the part of anyone who understands a little about the motives of mankind can see the difference in the two policies.

Welfare work has its idea centered largely on the care of the man away from his job. Industrial relations deals more specifically with the man on the job. In saying that welfare work has spent its day, it is not intended to convey the idea that everything done in the welfare program must be eliminated. There are some things that must be retained but they must be re-oriented and given a place and a motivation in the industrial relations program rather than let them dangle in an outmoded system.

Industrial relations, in its broad applications, is a complete abnegation of welfare work as such. It is a program that outlines its policies and program on a man-to-man basis. It recognizes the dignity and value of human personality and outlines its policies on the basis of man's right to be free and independent, his right to work and to be happy in his work. It recognizes the strengths, as well as the weaknesses, of man. It recognizes the common motivating factors of all people. It recognizes the fact that superficially men may be different but fundamentally they are all alike and actuated by the same desires. Men differ only in the artificialities of life. They all have the same universal instincts.

Industrial relations that are sound and effective must be planned on that idea. They are planned not only on what the management thinks and what the worker thinks, they also look broadly into the social concept of the industrial and civic society of which they are a part.

Tead and Metcalf, in their book, "Personal Administration," define industrial relations, or personal administration, as "the planning, supervision, direction, and co-ordination of those activities of an organization which contribute to realizing the defined purposes of that organization with a minimum of human effort and friction, with an animating spirit of co-operation, and with proper regard for the genuine well being of all members of the organization."

This definition indicates the new ideas which must carry on today; also it indicates certain ideas of the old program which must remain.

The supervisory personnel is not simply a production force watching machines and their output. It is a factor in industrial relations of the most impelling responsibility.

The physical accomplishments of industry have been the pride and joy of this nation. They have been able to do at times many things that have seemed impossible. And yet the industrial conflict rages ferociously and unceasingly, because the surface of industry's psychological problems

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THIS IS the eleventh of a series of short articles by Mr. McLaurine, prepared especially for "Cotton", discussing various phases of public and industrial relations work and problems of textile mills.

The series is in keeping with the current active policy of the American Cotton Manufacturers Association in this sphere.

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has hardly been scratched.

Modern management has grown so rapidly and so furiously and imperiously that it has overlooked the fact that man is a social being and that there are certain humanities that must be observed. The public, therefore, is indicting modern management for ignorance rather than not caring.

There is ample evidence in statements of platform and press that owners and managers of business do not understand workers' motives. This ignorance is one of the root causes of industrial unrest and yet it is a fact that there are too many managers who do not appreciate this fact.

An industrial relations department functioning intelligently can help to correct this unrest. It can find out what part of the welfare program is of value and the new motivation that must be given to it. It can also find out what policies are of value in its newly emphasized program of industrial relations. Every industry is an entity within itself and must provide its own plan and pattern. These articles can only suggest and stimulate action.

Responsibilities in Purchasing

By Herman Cone

President, Proximity Manufacturing Company, Greensboro, N. C.
President, American Cotton Manufacturers Association

THIS ARTICLE should be studied carefully by all mill executives connected with purchasing and manufacturing, whether or not the mill has a formal purchasing department. In clear, straightforward words, Mr. Cone describes the relationship that should exist between those charged with production-management and those who do the purchasing. He shows how efficiency, economy and good will all can be served if this relationship is developed and maintained . . . . . .

THE VERY NATURE of the purchasing agent's job has been changed within the past 12 months. Up to about a year ago I would say that the primary function of the purchasing agent was to secure the *proper* materials and supplies at the right prices; now it is to get suitable materials and supplies at any price.

It has always been extremely important for the purchasing agent and his staff to be on friendly terms with the plant managers and their assistants, and vice versa. Now it is vital for the two groups to co-operate perfectly. A regular system for handling purchases and requisitions should ordinarily be followed, but this friendly relationship should be so close that if any unusual circumstance should arise necessitating a temporary change in the procedure, either department should feel free to take the necessary action without fear that the other department would resent this breach of company rules.

Let me illustrate: Salesmen should contact the purchasing department before approaching the plant manager. As a rule, demonstrators should follow the same order, but this procedure might well be reversed in exceptional cases. Often, time could be saved not only for the purchasing agent but also for the demonstrator if the latter were permitted to show his products to the plant management first, and then have the plant manager handle the matter with the purchasing department should he consider the product worthy of a trial.

Let me give another reason for close co-operation: The plant manager will usually scrutinize requisitions for important items rather carefully before sending them to the purchasing department. All too frequently, however, items small in money value are handled by his assistants in an off-hand manner. The purchasing agent should feel perfectly free to question any and all requisitions in order to save money for the plant, and his action in this respect should not be resented by the production management. Much waste can be eliminated by this type of co-operation.

The maintenance of a proper relationship of a purchasing department to production management is often difficult, but is necessary to the most efficient operation of an organization. I would say that the establishment of this relationship is the very best way for the purchasing agent to assist the management toward greater efficiency in production.

It should be the function of a purchasing department to encourage conservative research and experimentation in the plant, but it must also be realized that the actual responsibility for the efficient operation of a plant rests with the production department.

The wisdom and tact exercised by a purchasing agent in co-operating with and frequently guiding production management determines in no small way the extent of his true value to the organization. The purchasing agent should always be on the alert for better and cheaper supplies and materials, but the introduction of innovations should always be *through* the production management—never *around* it. The purchasing agent should know that changes often prove to be costly and are apt to affect the quality and rate of production. He should ask the plant management to conduct experiments only if it appears to him that the introduction of the new item will be of great value to the mill from a purchasing or manufacturing standpoint. It should always be remembered by both the purchasing department and production management that low cost and productive efficiency are the ultimate goals and that neither personal prejudice nor favoritism should be permitted to cause either department to lose sight of these goals.

During these critical times, when the purchasing department is ex-

This discussion is adapted from an address by the author at the mid-summer meeting of the Carolinas-Virginia Purchasing Agents Association in Greensboro, N. C., on July 31, 1942.

tremely limited in what it can and cannot buy, it is more important than ever that it keep itself thoroughly posted on what the market offers and that this information be promptly passed on to the production management. The purchasing department should consider it one of its important duties to anticipate the necessity of substitutes far enough ahead to permit a thorough testing of the substitutes before the time for their actual use arrives. In order to accomplish such a program satisfactorily, friction between the two departments must be totally absent.

Full explanations as to why substitutes are necessary or expedient should be made and understood before the purchasing department actually deviates from definite requisitions of productive management. If this course is pursued, better co-operation will result and a greater confidence in the purchasing department will be established.

Furthermore, it should be considered the duty of the purchasing department to explore thoroughly all possibilities suggested by production management. Management, through its intimate contacts with manufacturing details, is in an excellent position to recognize chances to effect savings and to increase efficiency.

Neither production management nor the purchasing department can afford to permit first costs to influence their judgment in requisitioning or purchasing. Ultimate costs and efficiency of operations are the important factors. Production management needs the advice of the purchasing department as to prices and theoretical qualifications. The purchasing department should depend upon production management for advice as to the ultimate cost and practical efficiency. Together they should be able to arrive at the right answers.

They both should realize and respect the responsibility and true functions of each other and should strive constantly through collaboration and co-operation to accomplish the greatest benefit for the organization.

I cannot stress too strongly the value of good public relations, and the purchasing agent is in an excellent position to help his company create a favorable opinion for itself in the eyes of the public. Most of the visitors who come to our plants visit them for the purpose of selling us something, and the reception they receive at the hands of the purchasing agent or his assistants makes a lasting impression on them. The traveling salesman is a builder of public opinion. If you don't think so, make it a point to listen to the conversation held in almost any smoking car. It is necessary for the entire staff to be impressed with the importance of this point. It is not only good public relations policy to be polite to visitors, but it is also good business. We never can tell when a little act of courtesy on our part will be reciprocated manyfold. Just remember that the public views your company in the same light in which you appear to your visitors. If you are courteous, prompt, and fair, your company gets a good name. If you are the opposite, your company receives a black eye—and right at this time I would say it would be pretty hard to operate a plant with a black eye.

A "Cotton" snapshot of Herman Cone (right), the author of this article, in conference with W. M. McLaurine, secretary-treasurer of American Cotton Manufacturers Association, of which Mr. Cone is president this year

I would like to make one more suggestion to purchasing agents: Cut out all personal buying. I do not mean purchases of tools and equipment for plant workers, but I do mean purchases of items at wholesale that ought to be bought by individuals at retail. In the first place, it would be an utter impossibility to favor every employee in your plants—to do so would put an impossible burden on your department. Therefore, as you can't do it for all, do it for no one, and that includes the president of your company. In the second place, I do not think it is fair to the retail establishments in your community for you to use your purchasing power that way. Just remember that if every purchasing agent in town bought furniture, hardware, etc., for every employee in his plant, the retail distribution system would be seriously affected. A great many purchasing agents think that they can create friendships with the superintendents and foremen by purchasing articles at wholesale for them. This is perhaps true, but I think that what little friendship is established in this way is more than offset by the jealousies aroused in the minds of other members of the organization who do not obtain these favors. I also feel that if and when it becomes known that no more purchases will be made for any individual and the reasons for this change in policy are explained, you will hear very little unfavorable comment.

Always remember that you are a part of the management of your plant, and when you deal with other departments, practice the Golden Rule. If you do that, and use common sense along with it, you cannot help but be of maximum service to your company.

Gearmotors and Motor Enclosures for Textile Machine Drives

By J. Z. Linsenmeyer

Westinghouse Elec. & Mfg. Co.

THIS IS the second of a two-part article on the selection of motors and gearmotors for individual drives on all types of textile equipment, with particular emphasis upon the mechanical modifications involved. The first part, published on page 76 of the August issue, dealt primarily with the engineering aspects of gearmotors; the second, herewith, continues the discussion with treatment of the various types of motor enclosures and their selection to fit the specific textile applications . . . . . .

Motor Enclosures

The matter of motor enclosures was previously mentioned under the subject of mechanical features which should be considered in making the proper motor selection. There are numerous types of motor enclosures available to fit the motor to best meet the various operating conditions found in modern textile mills, and the selection of the proper motor enclosure on the basis of meeting the individual requirements will result in the most satisfactory and economical drive.

Splashproof. As the name implies, this type of enclosure is primarily for use in wet places. Fig. 5 showed direct current double reduction gearmotors with splashproof enclosure operating on a washer range drive in a textile finishing mill. It may be noted that the splashproof construction completely encloses the motor except for ventilating openings on the under section of the frame and end brackets. Thus, the motor is completely protected from the direct action of water or other liquids. Standard insulation used on splashproof motors should be suitable for the average operating conditions, but if a considerable amount of acid or alkali is present then special insulation (known as dyehouse insulation) is recommended.

An important factor which must be considered with this type of construction is that the ventilating air must pass over and around the motor windings, and if this air should contain large amounts of lint or other foreign material it might collect in the motor and would be unnoticed until the motor began overheating or was opened for inspection. The splashproof construction, therefore, is not recommended for application in an atmosphere of lint.

Due to the fact that the splashproof enclosure does not permit the passage of as much ventilating air as in the case of the standard open motor, the splashproof motor will run at a slightly higher temperature. It is the practice, therefore, to rate a motor with a splashproof construction on the basis of continuous operation with 50 degrees C. temperature rise above a 40 degrees C. ambient, which rating is 10 degrees higher than applied on the standard open motor.

Totally Enclosed. Fig. 6 shows a totally enclosed non-ventilated motor on a loom drive, and this type of construction has for many years been the standard for loom motors.

For larger motors, however, this type of construction is, as a general rule, economical only on application of intermittent service, wherein the motor is required to operate only for short periods, and with considerable idle time between the operating periods. The actual duty cycle should be considered for each application, but when the operating time is a small per cent of the total time the question of ventilation or heating is of comparatively little importance.

Due to the fact that there is no ventilating air to cool the motor windings, the totally enclosed motor, for ratings above 5 hp., has a capacity for approximately only 25 to 35 per cent of the continuous rating of an open motor of the

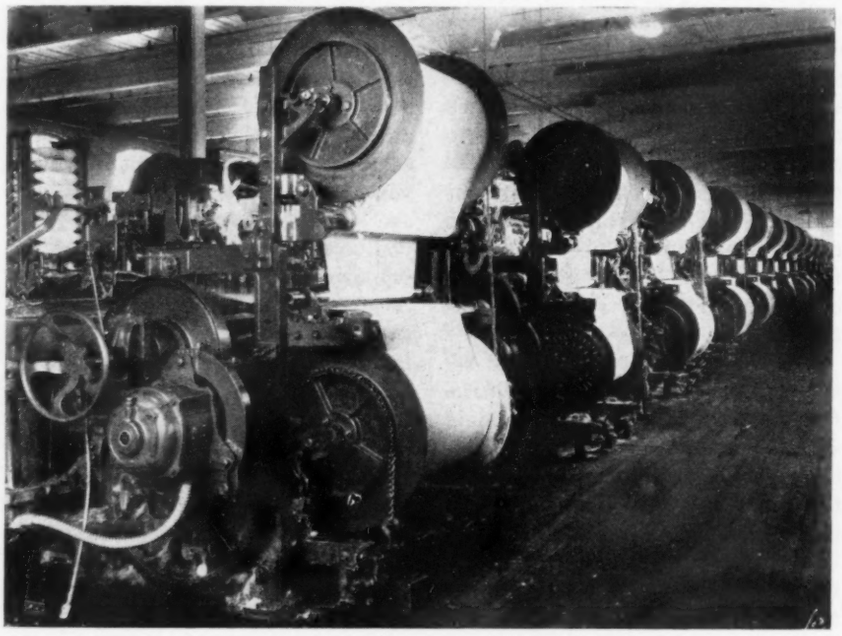


Fig. 6. A totally-enclosed non-ventilated loom motor.

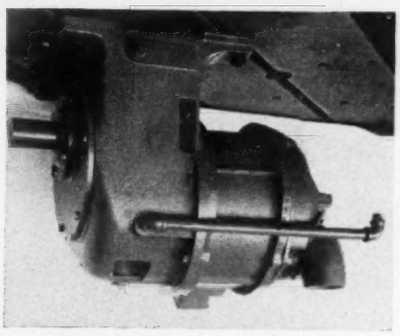


Fig. 7, ceiling-mounted single reduction gearmotor . . . .

same frame size. See Table II prepared on the basis of using a 4-pole, 60-cycle, squirrel-cage induction motor.

TABLE II

Frame Size	Motor Rating — HP Open 40°C. Continuous	Totally Enclosed Non-Ventilated 55°C Continuous
254	5	2
326	15	5

Consequently, to obtain the same continuous rating, the totally enclosed motor may be several frames larger than the open motor. For this reason, it will generally be found that for continuous operation for ratings 3 hp and above it is more economical to use fan-cooled construction or some other method of ventilation.

Totally Enclosed Pipe Ventilated. Forced ventilation is one of the most satisfactory methods of cooling, but the complication and expense of arranging the blowers and ducts necessary for the supply of cooling air tends to limit its use to the larger motors.

Direct current motors operating on adjustable voltage systems as for instance on printing or washer ranges, etc., may operate at low speeds—perhaps 10 per cent of maximum rated speed. At the lower speeds the ventilating air is very considerably reduced and consequently the motor rating drops rapidly with decrease in speed. For the constant torque application it is, therefore, frequently necessary to go to a larger frame motor in order to meet the lower speed requirements. As forced ventilation provides the same amount of cooling air at all speeds it will permit the motors to operate at the low speeds with the same torque rating as at maximum speed.

The amount of air required by an enclosed motor to meet the same continuous horsepower and temperature rating as when open is usually estimated at 125 to 150 cubic feet per minute per kilowatt loss. The kilowatt loss of a motor may readily be estimated from the full load rating and the percentage efficiency by use of the following formula:

$$\text{Kilowatt Loss} = .746 \left(\frac{\text{Rated Horsepower}}{\text{\% Rated Efficiency}} - \text{Rated Horsepower} \right)$$

where .746 is a constant for converting horsepower to kilowatts.

The air pressure required at the motor bracket varies somewhat with the horsepower rating and the type of motor construction, but averages from one-inch to two-inch water gauge; to which must be added the resistance of the piping to obtain the pressure at the blower.

Totally Enclosed Fan Cooled Motors. The totally enclosed fan cooled construction offers the maintenance advantage of the enclosed motor over the open motor, and it eliminates the mechanical difficulties involved in the installation of pipe ventilation. However, this type of construction is not suited for a machine which is to operate in an atmosphere containing a large amount of lint as this material will tend to accumulate in the air ducts, with consequent reduction in the passage of ventilating air.

In nearly all cases for a given horsepower and speed rating the same frame sizes are used for both the open and the totally enclosed fan cooled construction. Where a motor is to operate over a wide speed range as, for instance, is the case in some of the range drives, the fan cooled machine will not be as effective as the forced ventilated unit because of the reduced fan action at the lower

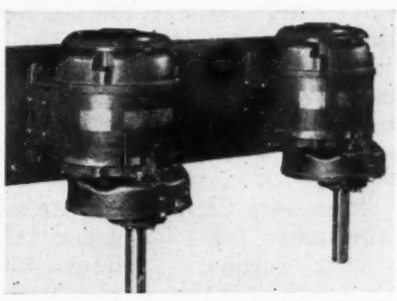


Fig. 8, typical single-reduction vertical gearmotors of the wall-mounted type . . . . . .

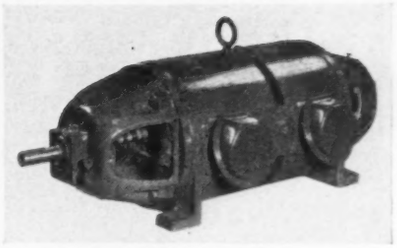


Fig. 10, a wound rotor induction motor and special generator designed in integral frame . . .

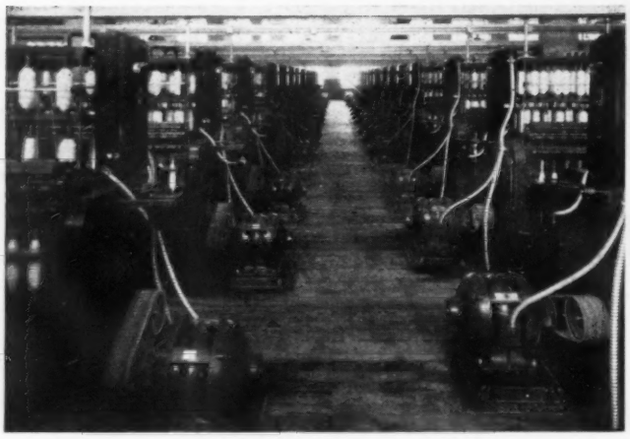
speeds.

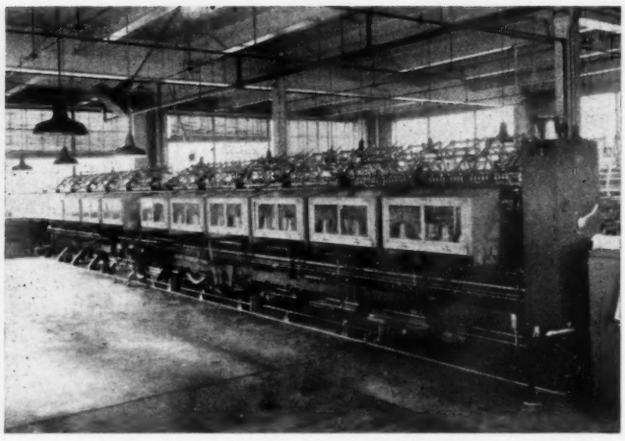
Special Mounting Arrangement. The conventional methods of motor mounting do not always provide the most satisfactory arrangement, and it may therefore be desirable to provide some special design modifications which will permit of a mounting more suitable to the application requirements.

The standard line of gearmotors are, quite naturally, designed for operation on a horizontal mounting support; however, where the application has demanded — ceiling mounted gearmotors have been provided as shown in Fig. 7, and likewise wall mounted units as shown in Fig. 8. Such units may require a special oiling system and certain other design modifications which distinguish them from the standard line of gearmotors.

Designs to Meet Special Requirements. Numerous new applications are constantly appearing for which no motor has exactly the right electrical characteristics to provide the most effective drive, nor the right mechanical construction to permit of the most efficient arrangement. For some of these cases certain minor modifications are available on the standard motor which will fit it to best meet the drive requirements. In other cases, however, an entirely special motor may be desired. If the results that could be obtained with such a motor justify its development, or especially if a large number of machines are expected to be used, then the custom-made motors may be considered economical. The textile industry offers many examples of motors specially designed for individual applications, and a few of these applications are discussed below.

Lint Free Motors. Such a mate-





Left, Fig. 9, open construction and special coil finish provide passage for cotton lint through these motors. Right, Fig. 11, a 28-section full-fashioned hosiery machine

rial as cotton lint is not in any way injurious to motor windings, but if a standard open motor is applied in surroundings where there is an appreciable amount of lint it will accumulate around various parts of the motor, and unless the motor is frequently blown out and cleaned it will reduce the ventilation, causing excessively high motor temperatures. To eliminate this maintenance required with the standard motor when operated in an atmosphere full of lint, the motors shown in Fig. 9 were specially designed with wide clearances and with highly polished insulation to allow free passage of the lint. This new motor represented a complete reversal in design strategy, as previously every effort was directed to keeping the lint out of the motor. Here, however, no form of enclosure is used to keep the lint out, but rather all rough spots where lint might tend to stick and accumulate have been eliminated, and the ventilating system is so designed that lint entering the motor will immediately be blown clear. This lint-free motor was designed specifically to meet the requirements of an individual drive on machines such as pickers, roving frames, spinning and twisting frames, winders, etc.

Full-Fashioned Hosiery Machine Drive. An outstanding example of special drive requirements is that of the complicated and intricate full-fashioned hosiery machine. The requirements naturally vary somewhat with the different types of hosiery machines, but all have certain features in common.

An alternating current motor is demanded which must have a wide range of speed adjustment with comparatively good speed regulation. The hosiery machine has a number of peculiarly shaped cams which give the machine a pulsating torque characteristic. At high speed operation the momentum will carry the cams over their cycle without much torque fluctuation, but at low speeds the effect of the cam eccentricity becomes more pronounced, and it is therefore necessary that the drive unit should have good regulation at these lower operating speeds. Another requirement is the necessity to change speed quickly from any operating speed to another predetermined speed. Generally, the knitting operation is done at some constant high speed, but for the narrowing operation the machine must be slowed down for a second or two to allow the needles to reset for different length of roll. This slow down must be accomplished quickly and is immediately followed by a fast acceleration to the previous high speed setting. Slower speed, approximately 1/7 of maximum, is required for the welt turning operation, that is, when the top of the stocking is turned over forming the double-thickness welt.

One particular hosiery knitting machine has requirements in terms of motor speeds as follows:

Knitting — From 1150 to 1700 r.p.m.

Narrowing—Approx. 850 r.p.m., Adjustable.

Welt Turning — Approx. 250 r.p.m.

The speeds from 1,150 to 1,700 r.p.m. as obtained with a wound rotor motor with secondary resistance control are ordinarily considered satisfactory for continuous operation. A speed of 850 r.p.m. with secondary resistance control, however, would have no slow down or braking effect as required for the narrowing operation, and a speed of 250 r.p.m. by resistance control is entirely impractical because of the poor speed regulation, and, even worse, the low stalling torque obtained.

A very satisfactory drive has been developed making use of a combination of a wound-rotor induction motor with a direct connected generator of special design to load the motor artificially at the lower speeds. This combination has been built in one integral frame, Fig. 10, giving the unit a pleasing appearance and eliminating the difficulties which might arise from the use of a mechanical coupling. Fig. 11 shows one of these units driving a 28-section (this machine knits 28 stockings simultaneously) full-fashioned hosiery machine.

It is interesting to consider that the fundamental arrangement of this drive was first proposed to provide quick stopping on elevators. It is certainly a far cry between providing quick stopping elevator service and the providing of fine knit rayon or nylon hose. This offers a fine example of the possibilities of utilizing the equipment which has been specially developed for one application, and by certain minor design modification adapt this development to solve the problems of an entirely different drive in an entirely different industry.

MODERN RAYON FINISHING

Article 5 **By Kenneth H. Barnard and Arthur R. Wachter**

THE FOUR previous installments in this series appeared in the April, May, June, and August issues. They covered generally the subjects of rayon grey goods, the plant and equipment to be used, the chemicals and other materials. The fourth installment began a discussion of the detailed processing of typical lines, covering cuprammonium sheers. The present installment continues this detailed discussion, covering pigment crepes, men's suitings, and men's shirtings. Women's dress goods will be treated later. Much of the fundamental discussion in previous installments is applicable to the current installment, and reference should be made to them . . . . . .

Pigment Crepes

THERE ARE two ways of processing pigment crepes—the old conventional way, which will be described first, and a new and unique method which is both better and cheaper.

In the old way, the goods are prepared for causticizing and boil-off in the same way as the cuprammonium sheers (see Article 4, August issue), and then after the boil-off, are transferred to the dyebecks for dyeing. Ninety per cent of these crepes go into printed patterns, while some 10 per cent are dyed in plain shades for slips and women's undergarments. It is customary to use direct colors for the dyed grounds except for blacks, navies and wines, which are done with D and Ds to prevent staining. Most of the shades used are pastels and by running the becks 24 hours a day, between four and five loads can be taken off. Continuous dyeing results in the usual advantages and as these goods are run on a low margin profit due to considerable competition, continuous dyeing certainly should be done if possible.

After dyeing, the goods are hydro-extracted, opened up and dried on a tensionless or loop dyer. Being light, they dry quickly and are next framed for printing, usually to 38-inch at the machine. In connection with the width, the grey goods are usually 40½ inches to finish 39 inches, but as the somewhat wider cloth cuts to much better advantage, the grey mills are now making goods which can be finished at 40½ inches.

In printing, the usual line of vat colors are used, or a mixture of Rapidogen and Indigosol type colors. Naturally, no naphthols are used and no particular care need be taken in drying the goods after printing. This does not mean that they can be run so as to embrittle the yarn, but merely that special drying is unnecessary with pigment crepes.

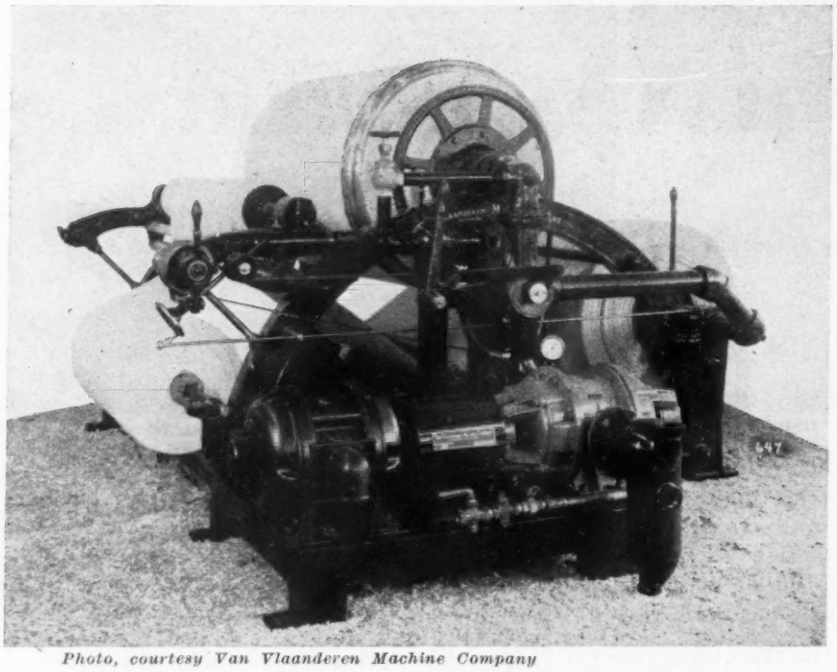
The usual ageing depending upon the type of printing colors used follows, and then comes a rope soaping. If ordinary soap is used, the goods must be very carefully rinsed. Otherwise, any soap left in them will cause mark-offs with direct dyestuffs or even with the vats, for that matter, as they are not fixed 100 per cent on the goods prior to soaping and any soap left in them tends to emulsify the vat pigment particles. It is better practically, however, to soap with a cationic softener and leave it in the goods without rinsing out, so that the final finish is obtained merely on drying. If this is not done, the softener must be put in on a mangle which adds another operation.

Goods from the soaper are extracted, opened, dried on a tensionless dryer or loop dryer and finally, framed to finished width. For a really super-fine finish, a run through the calender and decater is indicated, but it is rare that the selling price will permit this added expense. Of course, just calendering will give a somewhat mellow hand and is relatively cheap.

Now a new method, and one which we think is not in common use, is to take the goods in the grey and carefully sew and beam them. Then, the unmalted and unscoured goods are simply run through a pad containing the direct color, of sufficient strength to yield a shade a bit deeper than the standard. By transferring the goods to a jig and giving them three or four ends in salt, the color is fixed, with the result that this method saves causticizing, boil-off, beck loading, beck dyeing, opening and drying, or about three-quarters of a cent. The fact that some of the gelatine size is left in the goods is really an advantage, but this method is only suitable for print cloths, not for plain shades, as the prints have to be washed in a rope soaper anyhow and this shakes up the cloth and gives it a thick hand, just as soft and more pleasing than by the old method. One plant has been using this scheme for about four years, so that it is well past the experimental stage, as it has been complimented very highly for its finish and other mills have tried unsuccessfully to imitate it. This new method is both a better method and a cheaper method for pigment crepes.

Men's Suitings

The gabardine blends are mixtures of spun rayon and wool, spun rayon and Teca, etc., and cloths are medium to heavy weight. Therefore, they must always be beck-dyed and must invariably be treated with a malt



Photo, courtesy Van Vlaanderen Machine Company

A decater of the type described in the accompanying article.

enzyme before dyeing. This is done, of course, in open width, on a two-bowl mangle with grooves cut in it, as has been described (in Article 2, page 72, May issue). The goods are saturated with malt, are plaited off in a box and allowed to stand from four to six hours to permit the enzyme to get in its work. One containing a proteolytic enzyme is necessary, as gelatine is one of the principal sizings used.

On gabardine blends, the machine with a pre-shrinking apron-conveyor is ideal for boiling off. The continuous full width conveyor type machine may be used, but not the one with the two large submerged cylinders, and we feel the hand is not quite equal to that of the first-mentioned machine which permits a perfect opportunity for complete shrinkage, with the result that the finished cloth has much the same handle and appearance of a well fulled piece of worsted. It is possible that some felting action takes place on the spun rayon which results in this desirable characteristic.

After the boil-off, a medium-weight cloth will run very smoothly on the becks with no particular trouble and can even be run continuously. Heavy-weight cloths, however, must be dyed in strands and must never be crowded together so that the beck is overloaded. These cloths tend to stiffen when wet and get boardy, so that it is absolutely essential that the becks are spotlessly clean. Any scum, color or anything else will be scraped off by the tight, stiff cloth and will result in resist stains which are devilish to remove. For this reason, a wooden dyebeck is a handicap in dyeing men's wear and every effort should be made to have either a stainless steel kettle or at least one lined with stainless steel. Of course, with the heavy cloths, a strand is bagged separately in a clean, washed end cloth when removed from the dyebeck, and is then extracted, opened by hand and dried. The liquor level in the beck itself must be kept up to the top and running over, on account of trouble from chafing.

The colors used are fast-to-light directs, picking out those that have the best wash fastness. For sports shirts, a soft full round hand is desirable and for this purpose, we recommend an aqueous dispersion of a special type of acrylate resin. Using about 2-6 per cent on the weight of the solution, this has a slight delustering effect which is desirable, but is used mainly to give a full, mellow hand. If a firmer finish is needed, a tougher type of acrylate is used. These resins come in water solutions, slightly milky and are applied on a quetsch, and the goods are dried on under no tension whatever. The importance of temperature control cannot be overestimated, as if the dryer is run too hot, it will fuse the acetate or make the cloth boardy and harsh, while if run too cool, a moire effect appears which is very hard to remove. The goods are next framed for width, using only enough setting steam to take away the creases and going very easy on the blown heat. Since the goods are heavy, a 90-foot frame is required. Goods from the can dryer entering the frame are generally plaited down in a truck and the cloth threaded up through a low shakedown bar and then through Foxwell guides into the frame.

Men's suiting is always decatized. In fact, in some cases, it is calendered and then decatized. In other cases, this procedure is reversed. We have found a finish for slacks and some gabardines may be obtained by using one special firm's glossy acrylate resin which imparts a leathery hand to the goods, even when used in amounts of from only 2-6 per cent. We have found this to be the only resin with which powdered casein can be mixed successfully to the extent of about a half ounce of casein to one pound of resin. Although no formaldehyde is used, the casein seems to be firmly attached to the goods, as the finish will go through stripping and redyeing and come out again very firm. For slacks, it is also essential to decatize and this steaming probably helps fix the casein. If the surface is too flat, a light nip on the calender will correct it. This removes any glassy look from the cloth and gives it a nice hand.

Other types of cloth suitable for men's wear are the spun rayon and cotton mixes or the spun rayon and plied yarn fillings, similar to congo cloth and finally, the spun rayon and filament fillings or poplins. It is usually necessary that this type of cloth be singed in the greige. It is, of course, necessary that the exact finished result desired is known before starting this type of goods into work. If a somewhat hairy result is required no singeing is necessary; however, if a smooth, silky appearance is looked for,

singeing is necessary. On some types of cloth, where there is a decided face, it is not necessary to singe both sides of the cloth, in fact, it is an advantage to singe only the face, because the hairiness on the back of the cloth adds to the thick feeling and fullness of the cloth.

These goods are then rolled, sewed and beamed, malted on a grooved padder and wound on a roll off the desizing machine instead of plaiting in a truck. These rolls of cloth are hung on frames and rotated a bit by hand as they stand from four to six hours, in order to prevent drainage to the bottom of the roll. They are scoured on an open width soaper or if this machine is not available, they can be scoured on a jig 8 to 12 ends, which is rather expensive.

The preliminary de-sizing and scouring treatment on these spun rayon men's wear goods must be thorough, especially if they are to be anti-creased. Less than .5 of 1 per cent of impurities in the goods at this point will prevent uniform absorption of the resin and result in uneven and undesirable goods. If after dyeing and finishing, goods that have been anti-creased, show a frosty effect, you may be sure that they have not been properly desized. There is no cure for this disease. So with the emphasis on cleanliness, these goods can be dried on cans or on a new air-circulating type of dryer and are wound up again on a shell after drying.

If the goods are to be vat dyed, this is done by the pad and pigment method, but a special pad (as illustrated in Article 2 in the May issue) should be used. In this pad, the color box is made very shallow. The cloth goes under a small immersed roller which is placed close to and under the mangle roll, so that the cloth after immersion, is held hard against the mangle roll, as it is carried up to the nip.

The idea here is to prevent any vibration with consequest migration of the unreduced vat color before it is squeezed. This is an important factor in getting the uniform vat shade and this particular type of mangle was evolved after a good many headaches. Furthermore, you will note from the illustration that the bottom roll is much larger than in the ordinary pad, and is roughly 50 per cent bigger than the top roll. This again is with the same idea of holding a wet cloth against the roll so that it cannot vibrate. Both rolls are rubber covered; one with a fairly hard rubber, and the other with a softer compound. It is also quite a trick to get the right degree of hardness on these rolls, as too hard a surface tends to form blisters on the cloth and too soft a surface loosens up repeatedly in use and has to be replaced.

Finally, the squeeze and there is plenty of it used, due to the long levelling action applied to the bottom roll, not the top one which is held stationary. The speed of this pad is from 60 to 150 yards per minute.

Vat dyeing on rayon and mixtures is quite a trick and the problems are more and unlike those encountered in cotton dyeing. To begin with, the selvage on rayon goods is quite often heavier, thicker, or of a different yarn than the ground of the goods. With a heavier or thicker edge, goods which have been run through a pigment padder, would build up and cause a heavier pressure on the edge of the roll. This would cause a serious migration of color and in some cases would run into the ground of the cloth for an inch or more from the selvage.

Again, on rayon cloths it is necessary to minimize tension; therefore, goods are rolled much looser through the pad and are batched much looser than cotton goods. This looseness, of course, will allow air to get deeper into the roll than if they were padded and rolled as tightly as cotton goods can be rolled. Rayons cannot stand any pressure after pigment padding; therefore, a padded roll cannot be allowed to rest on any surface, but should be hung from the ends of the shell. To overcome all of these difficulties, the best solution is that a set of dry cans be connected up directly with the pad, so that the cloth runs quickly from the pad to the dryer. It is wound off the back of the dryer and returned to the jig for reducing and oxidizing. As it is difficult to match a vat color applied in this manner, some method of laboratory control has to be worked out in order to make sure that the proper strength of color is applied to the cloth in the pad in the first place. This can be done by taking a patch of the goods in question, about 6x12, running it through the pad with the color made up, and then drying it while laid out flat on an air dryer. This horizontal drying is important. Then the patch is wound around a glass rod like a metal jig roll and immersed in 400 cc of water, 30 cc of 69 degree Tw. caustic and 15 grams of hydrosulphite for 20 minutes at 120 Deg. F., then dipped in cold water and washed. The patch is oxidized by treatment for five to eight minutes at 180 degrees F. in 400 cc water, 10 cc of 58 per cent acetic acid and 5 cc of hydrogen peroxide 100 volume.

After rinsing in water and boiling in soap, the shade obtained on this patch so treated, will be found to be a match for the same goods run through the same dyestuff in the dyehouse.

From the jig, after washing and soaping, the goods are run over a vacuum extractor and dried on a can dryer. For goods that are to be dyed with direct colors instead of vats, the same sort of scouring is applied and the direct colors padded on and then the goods given several ends in the jig in salt to fix them. Of course, here if the shade is not quite right, an add can be made at the jig. D and Ds are, of course, developed on the jig in the usual manner.

Men's Shirtings

In finishing men's shirtings, it is important to get controlled shrinkage and the usual method of doing this is to apply an anti-crease resin. This is done on well-scoured and cleaned goods, using a heavy three-bowl hydraulic mangle set directly ahead of the frame so that a resin can be dried in and then removed to a tensionless dryer where it is baked. The minimum requirements are three minutes at 300 degrees F. After the cure or baking, a thorough soaping in the open width is essential to remove any unfixed resin as well as any held between the threads.

It has been pointed out already that resin impregnated in the fiber

results in anti-crease properties, so the soaping must be thorough and can be done while on a continuous soaper or on the jigs. The goods are then vacuum extracted and dried. They are usually softened in finishing them; first to get a nice fluffy hand and second, to prevent the sewing needles from cutting the cloth when they are made up into garments. This can be a serious defect in this type of goods and the best preventive is a stearic acid softener following its application.

The goods are framed and decatized with a full minute steaming before starting to exhaust, as this again tends to fix any unfixed resin and prevents the formation of odors. Furthermore, we find that rayon fabrics which have been resin-treated are somewhat harder to penetrate than the untreated ones, so that no short-cuts are permitted on decatizing. A cold calendering is sometimes used to get a little softer effect in the finish.

In a previous paragraph, it was indicated that the use of the anti-crease resin was more to stabilize the cloth than to give it anti-crease properties. This is a fact as, in this country, the public is not as anti-crease conscious as they are in England for example, and this finish is used rather for its improved hand than for its added resiliency, although both are desirable.

The question arises as to why not obtain the stabilization of non-shrinking properties through Sanforizing, but Sanforizing on spun rayon meets with two objections: In the first place, the goods tend to get shiny and about the only way to correct this is to use a urea formaldehyde resin so that we are right back on the anti-crease process again. The substitution of acrylates for urea formaldehyde is hopeless, as the finish is more glossy than ever if this substitution is made and the goods Sanforized. The second danger from Sanforizing spun rayons is that although the machine is set for zero shrinkage, it is found in practice that the goods are really over-shrunk and instead of getting shorter on cleaning, they actually grow longer. From a textile standpoint, it would be quite ideal to come out with more yardage each time a garment is cleaned, but from a tailor's standpoint, this lengthening is just as serious a defect as a shrinkage. Cluett, Peabody & Co. have undoubtedly realized these defects, as they offer their Sanforset process for shrinkage control of spun rayons. All samples we have seen of this were rather stiff, which again is a detriment. Attempts to get around these troubles by over-feeding the cloth on a pin frame are not too successful either, as the goods go right back when wet out to their original dimensions. This shrinkage question was not a serious one where the chemists were testing by dunking the goods in cold water, drying on a flat frame and measuring the change in dimensions, but now that the test consists of putting them in a washing machine at an elevated temperature, shrinkage figures are much more severe and troubles of the men in the plant are on the increase.

Callaway and Brighton Employees Served by New Bus Lines to and from Work

AS A MEANS of providing transportation for employees of Callaway Mills plants in LaGrange and Manchester, Ga., who live in nearby communities, Victory Lines, Inc., a service company, was organized by mill officials to operate busses making daily runs to all shifts from terminals within a radius of 50 miles of LaGrange and Manchester.

These busses are operated to provide comfortable and dependable transportation, at the lowest possible cost, for those employees whose normal practice of driving in to work each day has been affected by the rubber and gasoline situation.

Approximately 1,200 persons will be served by Victory Lines, which handles transportation to all of the LaGrange plants and to the mill in Manchester.

Season tickets, designated for each week and providing transportation back and forth to the plants for six days, are available at $1.50. Coupon ticket books, containing 12 coupons good for transportation on any day, are obtainable for $1.80. All tickets are good on any route, for any shift, for any distance traveled by the bus.

The busses are painted red, white and blue, each carrying the trademark of Victory Lines, a blue V on a red circle with a white star. This seems particularly fitting since so much of the mills' production is going directly into the war program. Comfortable, leather-upholstered seats, easily-opened windows, a buzzer system, a heating system for winter, overhead lights and lighted steps are features of the busses. Each bus is equipped with various safety devices including a fire extinguisher, first-aid kit, flares, fuses, and an emergency door.

All busses leave their terminals an hour and 30 minutes before shift time, picking up passengers along the route and arriving in LaGrange or Manchester about 20 minutes before shift change time. About 20 minutes after shift change time, the busses depart for their terminals taking the employees who have just completed working their shifts. Eugene F. Parker is manager of Victory Lines.

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The Victory Lines project is another example of means by which the transportation problem is being met throughout the textile industry. A detailed description of the method employed at Avondale Mills appeared on page 80 of the July issue of COTTON *with a discussion of the general problem.*

Another example is the case of the Shannon Transportation and Development Company, operating busses for the exclusive transportation of employees of Brighton Mills, Shannon, Ga., to and from their work. The schedule of the Shannon busses, approved by the Georgia Public Service Commission, calls for five routes, each of which is traveled three times daily to accommodate the employees of each of the three shifts. The busses arrive at the mill 15 minutes before shift change time, and depart 15 minutes after the shift change. The price of transportation for one full week or any part is $1.50 at present.

Looking After the Stragglers

IN TEXAS, a good many years ago, before we had any railroads, cattle were driven over trails to market and these trails were long and it required weeks to make the drive.

Some cattle were always too weak to keep pace with the herd, and being jostled and crowded by the main herd would gradually fall to the rear and would finally be left entirely behind. The cattle which fell back this way were called "stragglers".

The drivers, or cow boys, "knew their cattle," and by their close observation they could tell you one day just how many stragglers would fall out the following day.

Now there was a price on the stragglers. They were cattle just the same the leaders of the herd, and it was necessary to get to market with as few left behind as possible. Quite frequently a man was delegated to look after these stragglers and bring them on into market, perhaps days after the main herd had arrived.

On the trail, the cow boys had to watch the herd very closely, and especially the leaders, and avoid all undue excitement lest the leaders should start a stampede.

Now, of course, this has nothing to do with cotton or textile milling, and I do not, by any means, intend to compare our help to cattle.

I have related the foregoing facts in order to borrow the term "straggler" and apply that term to our problem of help management. Perhaps we will find a few straggling overseers before we have finished.

Detect the Straggler

There are quite a number of things that will make stragglers in a textile mill. We must learn what these things are and try to prevent their occurrence. We must learn to detect a straggler before he has fallen out of line, and put forth our best efforts to prevent his falling out of line.

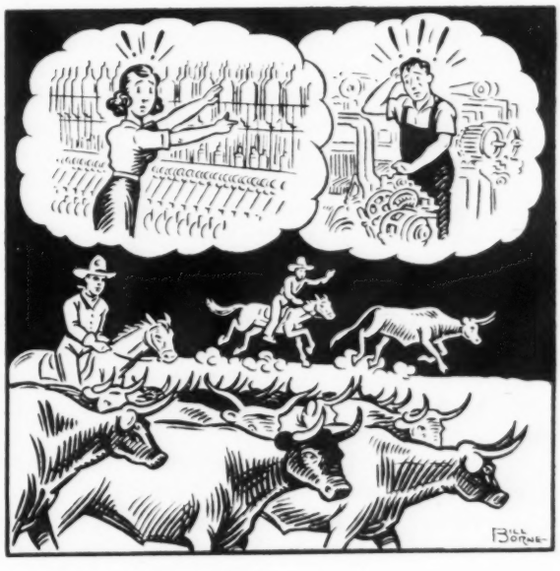
I believe it has been the practice of some overseers to let the stragglers out. When they see one, the first thing they do is to begin looking for someone to take his place. They will frequently try to drive the straggler back into line, and this driving, or crowding him is sure to knock him out sooner or later, for he cannot hold out if he is driven or crowded.

Now remember, the best paid cow boys were the ones who lost the least number of stragglers. They knew their herd and exercised much patience with the would-be stragglers.

Textile Stragglers

Perhaps we have a weaver who has fallen behind with her production—a straggler. Let's investigate a little and see what we find. Perhaps the smash hand has bawled her out a time or two about making up a little smash or pick-out, and to avoid another bawling out the weaver has tried to do too much smash hand work herself and has gotten stuck up with her looms.

Maybe the loom fixer has bawled her out, and to avoid this she has tried to run her looms too long without the attention of the fixer, and has lost a great deal of production in that way. To make matters worse for her, you go around her looms with a frown on your face, trying to express to her in your looks what you are too much of a coward to tell her in words, and that is, that you are not satisfied with her production and you don't like to see so many of her looms stopped.



Yes, you get the idea over, and this excites her. She is conscious of the fact that she is not giving satisfactory service. This mind worry helps to fatigue the body. Consequently, she becomes an over-worked weaver—a straggler—and she finally gives up all hope.

Who is to blame for this? How many of you know that one of the obligations of your job is to detect this straggler days earlier, and to keep her in line? Don't you think you have committed a crime, both against the company and the little weaver, to let her finish like this when it was in your power to prevent it? An overseer is himself a straggler when he lets a thing work out in this way.

How to Assist the Straggler

Now we have learned one thing that will make a straggler. Let's see if we can learn how we could have saved this one.

When you went around her looms today when she was stuck, instead of that sour look you put on, you should have tried to look pleasant, and by so doing it would have had a tendency to quiet that nervous feeling she had about being stuck. You should have helped her a little if you had time, or should have gotten a spare weaver to help her get straightened out. Then after she got them going good you should have gone around with a reassuring look and said something like this:

"Well, I see you have them all going again. That's

fine! Now you must not feel discouraged when you get stuck that way, for the best of us get stuck sometimes." Then proceed to tell her in a nice way, the best way for her to watch her looms; encourage her to get the smash hand to help her out when she thinks she needs it; tell her the smash hand is like all the rest of us, she gets tired and nervous sometimes, but she is really very competent and you are sure she will help along all right. Then tell her about having her looms fixed when they need it. In other words, you must try to restore her confidence in the smash hand and the fixer and herself.

Then you must go to the smash hand and tell her about the little woman over there who is doing her best to keep pace with the rest of the weavers, and make suggestions as to how she can be developed into a good weaver. Then go to the loom fixer in the same way, and get his cooperation.

Next thing, you will notice that her production is picking up. You have not paid any special attention to her perhaps, and you are really surprised a few weeks later when you pass by her looms and notice those rosy cheeks and that healthful, contented and happy countenance. She sees you standing there looking at her and she steps out of her alley and approaches you, with a smile, and says:

"I just want to thank you for that talk you gave me a few weeks ago. I must confess that I had the wrong opinion of the smash hand and the fixer. It was all my fault the way I was getting along. Everyone here is so nice to me that I think I just want to weave forever."

You don't know what to say, but —well you are spared the trouble —she sees a loom stopped and away she goes. There you are! You have saved a straggler and there's another star in your crown.

It's Just as Easy to be Nice

I know of one instance where a superintendent had been paying special attention to bad bobbins of yarn being made in the spinning, and he was getting results in his efforts to have the number of them decreased. They had to come down. That was all there was to it. The superintendent came through the mill one evening just before stopping time, and as he passed by, one of the section men, who had been fighting it hard all day but felt rewarded by his achievement, stopped him and said:

"I have only made two bad bobbins today." Instead of congratulations, the superintendent replied very curtly, "That's the way I want it run; in fact, that's the way it's got to be run," and walked on. He had given a man a hard jolt; he had started a man to straggling. A few days later he lost the man who had made but two bad bobbins of yarn in one day.

It would have been just as easy for the superintendent to have said, "That's fine; I thank you, and I'm glad you are so interested in your work. I appreciate the efforts you are putting forth along this line." That would have kept the "two bobbin" man on his job.

Keeping Them Guessing

Some overseers have told me that the best way to manage help is to "keep them guessing"; never let them know what you are going to do or when you are going to do it. My observation has been that an overseer who puts that principle into practice always has a string of stragglers. You know when it comes to guessing, the chances are about 50-50 that you will guess wrong. When a man makes a few wrong guesses he is out of the game—he is a straggler.

A driver is, to a great extent, responsible for the stragglers, so don't keep them guessing; when you do, there is an undercurrent of uneasiness—a nervous tension —and just a little excitement will start a stampede. You see the help bunch up in little groups and talk for a minute. You wonder what they are talking about. Mister, they are "guessing". That is what they are doing, and that is what you want them to do, so let them alone. You have got them right where you want them. They have to bunch up and put two and two together and add this and that and shake it up and shoot another guess.

I don't mean to say that you must go around every morning and tell all the help all of your business, but I do believe in shooting straight with them; be open and frank with them; eliminate this guessing game. You will be repaid in loyalty and confidence.

Some overseers have told me that when you go to bawl a man out about anything, the first thing to do is to write out his time and stick it in your pocket, and if he threatens to quit, hand him his time slip. They say, make him think that you were going to fire him anyway. Don't let him think that he surprised you and quit on you.

Gentlemen, the cow boy treats dumb brutes better than that. He tries to save the stragglers. He never bumps one off that way.

Another Straggler Saved

A few years ago a loom fixer had gotten into a rut and had begun to straggle. The boss weaver was looking for another fixer and was going to fire the straggler as soon as he got another man to take his place. The secondhand was working on the case too, but from a different angle. He was finding out what was wrong. He got his dope all together and worked up to the psychological moment in a conversation with the fixer. The secondhand had seen to it that they were in a place where they likely would not be interrupted. In the conversation the secondhand said to the fixer:

"I know just how you feel and the attitude you take toward everything in general, for I have been over the same road which you are now traveling. I was once as thoroughly disgusted with the thing as you are now. I actually reached the point where I had quit trying, and I expected the boss to fire me any day."

The secondhand won the confidence of the fixer, who felt that he really did have a friend; that somebody had an interest in him. The fixer confessed how careless he had been on his job and he then went back to it with a new determination and a new feeling toward the world in general. He had not been fired; the secondhand had not bawled him out and he really felt that the secondhand was the best friend that he had in the world, which was no doubt true. He picked his job up, and in three weeks' time topped

the production board for both quantity and quality—a straggler saved!

Who was the best man, the boss weaver or the secondhand? Well, I guess you are right! The boss weaver is still on the same job, dotting his trail with stragglers. The fixer is a head loom fixer and the secondhand is not there anymore. He, soon after this, went away to another mill on a boss weaver's job of his own. He is leaving a trail where he goes, but there are not any stragglers left behind.

I don't believe in an overseer going to the extent of being too familiar with his help. He must be a leader and hold himself in a leader's place. A friendly smile, however, at the right time; a word of encouragement to the straggler; a word of caution and friendly advice; expressions of appreciation for extraordinary accomplishment, all these, will cost nothing. In fact, you actually feel better when you practice this, with genuine feeling, and it will be worth more to you in running your job than will all your technical skill.

Look over your job now and see how many stragglers you have. Are you going to save them? You will perhaps need help. Remember how we had the smash hand and fixer to help save the weaver. Are you able to enlist help?

Now let's sum it all up like this. I think we can almost get it boiled down to one word, the word which we heard so much about a few years ago, but so many seem to have forgotten. It is *cooperation!*

Straggling Overseers

Now let's talk about straggling overseers. You have perhaps seen overseers always behind with something. Maybe yesterday they were too busy to inspect their seconds—yes, these overseers we are talking about right now have lots of seconds. The overseer must go in the cloth room today and inspect the seconds which the cloth room man has thrown out. He finds that several seconds were made by looms being out of order in some way or another, and by not having time to look at the seconds yesterday and correcting the looms they have each made another second today. Well, while he is getting over all this, he has a certain style of warps that are running out and he doesn't have time to check up on them and so does not notify the boss spinner about the filling. Next day the warps are out and he has about half of his bobbins tied up on this certain kind of filling. The boss spinner is sore because he is now having to wait on bobbins.

Things rock along and the weavers begin to get sore because they have to wait for filling. In the mean time, the slasher man has filled up all the loom beams with warp, and about that time the special order that is coming through gets tied up at the warper waiting for section beams that the slasher man cannot empty for lack of loom beams that can't be emptied for lack of filling, etc. Oh, the boss weaver is not to blame. Hasn't he been working like a slave all the time? He needs some help. He just hasn't had time to look after all this at the proper time. He is too busy doing yesterday's work to plan for tomorrow. He is too busy dodging failure to win success. He is riding at the tail end of his job; too busy to get in the lead. He is a straggler.

The Younger Straggler

Perhaps some young man, through years of loyalty and hard work, has made good, and he leaves his home mill and starts in on an overseer's job, among strangers. He starts in with congratulations from and good wishes of all his friends. He makes good all right on his new job, but time rocks on and he seems to come to a standstill; he gets discouraged; he wants to go back and settle down again among his old friends but his old friends have quit writing to him and he begins to feel more forlorn than ever. Finally he writes home about a job. His letter is not even answered—I have seen them go back and I have seen them want to go back and could not—but due to his long contact with his home mill he figures that he is at least due the courtesy of an answer to his letter, even though they have no job for him. Something has gone wrong. He wonders what he has done to cause him to be ignored in this way. He is now beginning to straggle.

Now, young man, if you are in this class you must pull yourself together and cheer up. You know there seems to be some of the wild animal in us after all. As you know, a wild animal protects and raises its young. A wild animal will even risk its own life to protect its young, but when the young has reached its maturity and is able to stalk its own prey, the older ones forget all about him. He is now one of the pack and he must look out for himself. If he goes hungry it's his own fault. He has failed to provide for tomorrow.

Now as a word of encouragement, I want to tell you that what your old friends and former employers think of you does not add to or detract one bit from your abilities to run a job. You are just as good a man now as you were before you wrote home for a job, and if you will look at the matter in the right way you are even a better man. You cannot now afford to go down in failure. You will pull yourself together and get back into the lead.

Failure is a Spur to Good Men

Many of us would be much better men if we would only make the right kind of capital out of the knocks we get as we go along.

You have perhaps seen school boys get their faces almost beat off, but would never admit defeat. A man is never really defeated till he admits it himself. But when you do admit it, then you are licked good and proper.

Don't make yourself a subject of ridicule. I know a boss weaver who one day found two or three bobbins of knocked-out filling in a bobbin can. He looked over the loom and found the shuttle bouncing or rebounding in the off end from the battery. He borrowed a wrench from a fixer and tightened up the check strap. After a while he went back to this loom and did not find any more filling knocked off, so he immediately gave orders for every check strap on the off end of the looms to be tightened up to stop knocking off filling. The secondhand tried to show him the folly of such an order, but the

(*Continued on page* 80)

What Lies Ahead in Textile Machinery Developments?

HERE ARE some thoughts for consideration in conjunction with improving the textile machinery to be used after the present wartime restrictions on developments are ended. The author, with some prophecy but mainly indicating the opportunities for further advancement, provides some thought-provoking and stimulating ideas . . . . . .

NOT LONG AGO, the writer had the privilege of being a passive listener at an informal discussion by a group of the leading textile machinery engineers and designers in the industry. This group of men, by their imagination and intellectual courage, foresight and intimate knowledge of the industry and its requirements, have made far-reaching and fundamental contributions to the technique of cotton spinning. These contributions have been, in the main, the basis of our modern spinning process, with its straight-line, labor-saving and quality-producing short cuts.

The innocent bystander remarked that he did not see where and how there could be many drastic changes from our present conception and practice, where labor costs have been drastically reduced, luxurious and wasteful processes and practices eliminated, and quality placed to a new high standard. It appeared, remarked the innocent bystander, that we are rapidly approaching that point where efforts would be restricted by the application of the "law of diminishing returns".

It seems, however, that this limitation is far from existing and that there are still problems to be solved, processes to be perfected, and intangibles to be explored, which, when future researches are completed, will place the art of cotton spinning as far ahead of the present practice as the present practice is ahead of that in the early 1890s.

It does not take much reflection on the part of any one familiar with the modern mill to see that many of our present day processes which are apparently in the upper brackets of efficiency, are in truth but makeshifts and applications used simply because we have nothing better; although we have an idea as to their shortcomings, our imaginations and mental processes have so far been unable to reveal better ways of doing familiar jobs.

For instance, take the modern cotton gin. It has been refined, modernized, and improved beyond description in the past 20 years; the application of pre-drying and other accessories has unquestionably been beneficial. In some cases, pre-cleaning has helped. But the actual ginning is substantially the same pulling-and-tearing process discovered by Whitney. Every bale of cotton sent from the gins contains its unwanted proportion of leaf and seed fragments, of dust and sand, curled and broken fibers, and those little lumps which persist even through the finisher picker.

The Opening Process

The modern opening room, with its cleaning and blending feeders, its synchronized production, labor-saving and power-saving installations, will under good management produce laps which will not vary more than one-half ounce per linear yard, which is indeed close regulation. However, an examination of the sheeting and an appraisal of the disposition of the stock within the lap show that the density of the lap is far from the standard of uniformity which represents conditions which the critical technician should find satisfactory. It is true that the yard-for-yard evenness approaches perfection; but the division of the 1,440 square inches in a yard of a 40-inch lap into smaller divisions—let us say, 48 squares of 30 square inches each—and weighing these units will reveal startling variations.

We believe that the time will come when these variations will be reduced to the degree where they lose importance and that pickers and opening room equipment will be designed which will clean without curling and breaking the fibers, where air will be used more effectively as a cleaning agent and where the last trace of dust, leaf and sand will be removed before the stock reaches the card room. Along these lines, much has been accomplished; there is much more to be done before the job can be called finished.

What About the Card?

Cards have been a source of worry and frustration to the engineers who have been trying to improve on the modern revolving flat card.

In the last ten years, serious experiments have been carried on without regard to time, trouble or expense, without tangible results as far as practical accomplishments have been concerned. There have been cards with small cylinder and a small number of flats, with superimposed doffers, with flats arranged in section, some running forward, some backward. There have been high speed cards as well as tests at lower speeds. Experiments have been made with all kinds of wire combinations, with multiple mote knives, stationary and revolving, and concurrently, tests and trials of all kinds of gadgets, singly and in conjunction with other gadgets. Yet the card remains, except for refinements in construction and for tolerances to promote interchangeability of replacement parts, practically the same card.

The function of the card, in the main, is to separate the individual fibers, to extract the short, broken and immature ones, to remove the leaf, seed fragments, and motes remaining after the previous cleaning, and to form the cleaned fibers into a sliver. Truly, this is an impressive task, entirely satisfactory as far as our present standards are concerned; but to the seeker after perfection, it is a very incomplete performance.

First, the card, as it is constructed at present, is seriously lacking in the necessary ability to select the short, immature, weak and damaged fibers from the long, spinnable fibers and vice versa. As a consequence, the stripping may, and as a matter of fact does, contain as much as 50 per cent of good staple and it takes only the most superficial inspection of the clearer waste, or the thread boards of spinning frames and twisters, to show that they are loaded with impurities which should have been extracted at the card. It is, therefore, evident that as far as the card is concerned, there is a long way to go before we reach a point where there can be any question raised as to the futility of further research. The purist would say that as far as real accomplishments are concerned, the card, perfect in the minds of some men, is one of the most inefficient machines in the mill.

Further, the card today is the result of "hand-me-down" ideas. Some engineer with courage and foresight is going to build a card with half the weight, less floor space, higher production and better overall efficiency some day, somewhere.

The card room processes are also subject to vast improvements. For instance, the use of canvas containers for slivers; cans are expensive, not very durable, clumsy to handle, take up lots of room, and at the best, hold only about 14 pounds of stock. Some day, there will be a development which will eliminate these waste makers.

On the machinery itself, production has reached high levels; in fact, there are roving frames running in mills without number where it is not unusual for a set of bobbins to be produced without the necessity for the operative to piece up more than one or two ends. The bottlenecks still existing in the operation of roving frames are doffing and creeling. An effective stop motion to detect end breakage between the delivery of the roll and the nose of the flyer and following detection, to stop the frame, is needed to permit the operative to attend more than the three or four frames now considered an assignment. A device to doff automatically is needed badly. This device must be simple in design and construction, easy to operate and not subject to expensive maintenance operations. The industry also needs a better form of back stock than the sliver coiled in the clumsy roving can. Creeling, as now practiced in the best mills, is a source of lost time, expensive waste, bad work and is a relic of the "rule-of-thumb" days.

Improvements Needed in Drafting

Considering the card room and spinning room as a single unit, as far as the drafting is concerned, there is still a long way to go before the law of diminishing returns will put a brake on research. For example, believe it or not, one can hardly select a mill and pick out ten bobbins and reel 300 yards of yarn off each bobbin without finding that the variation in these 300-yard units would run as high as 300 to 400 per cent, even with modern drafting systems in the card room and spinning room.

The breaking strength of the best yarn approximates only a very small proportion of the intrinsic strength of the cotton fiber, which is 80,000 pounds per square inch. Imagine what would happen to loom production if the breaking strength of the yarn could by some simple betterment in the drafting process, be increased to reflect a higher percentage of the inherent strength of the cotton.

Mechanically, the spinning frame and the roving frame of the present era are good machines. Some details are sources of trouble, and while the elimination of these troubles seems to be an easy matter, such is not the case. For example, the oiling of top rolls is still the bugbear that it has always been. Top rolls, with antifriction bearings, which start out with every indication of successful application, soon develop weaknesses which direct them to the scrap pile. Clearers have a lot of room for improvement and we are still searching for the ideal top roll covering. The use of cones in roving frames is continued because, although we know that the cone belt introduces unpredictable variations in tension, nothing better has yet been developed.

Some of these days some smart technician is going to perfect a small, efficient, reasonably-priced motor-driven spindle which will eliminate the cylinder, tapes, tension pulleys and the variation in twist which are the result of slipping tapes, uneven tension and variable cylinder speeds.

Spinning room help all hate and dread the task of cleaning the underworks of spinning and roving of the lint, oily waste and other accumulations which gradually cover these parts. This task must be done when the frames are stopped, so the frame of the future should incorporate means for preventing the accumulations around the bobbin and spindle shafts of roving and develop a system of directed air currents which would keep the lint from accumulating on the underworks of spinning. We may see these features incorporated in the frames of the future.

We also need an assembly of rings and travelers which would allow a higher level of spindle speeds, a level which would permit front roll speeds on medium counts of at least 500 inches delivered per minute. At this time, with stock well prepared, the front roll speed on modern frames with a 1-inch front roll is 141 r.p.m. with a twist multiplier of 4.75, when making 20s yarn. The spindle speed would be 9,400 r.p.m., and the traveler speed 4,919 feet per minute. The traveler speed limits the entire operation, since a high level would burn the traveler and develop other operating difficulties. If the traveler and ring assembly could be bettered so that the level could be raised only 15 per cent, the entire operating economy of the spinning room would be affected and, incidentally, much of the present equipment rendered obsolete.

The same reasoning can be applied to the whole range of machinery. Textile machinery, as produced by the best American makers today, will last for 50 years and still make good yarn. However, with the changes taking place in our social and economic life, with almost universal education creating new desires and ambitions, operating equipment which requires the performance of irksome and distasteful routine operations will become increasingly difficult, without the payment of premiums in some way.

We therefore predict that as soon as the current emergency is over that the designers and technicians, who have already made American textile machinery the world's most efficient, will have practical answers for many of these problems.

The next era of the industry will be noted for the variety of numbers of synthetic fibers, for the more efficient and effective machinery, and for the elimination of many of the processes and routines handed down from the days when the industry was in the formative period.

Farmers to be Paid for Using Cotton Bagging

American cotton farmers are now assured of being compensated for wrapping their cotton in cotton bagging. Under a plan adopted by the major mill and trade associations and the cotton exchanges, all trading rules covering the buying and selling of cotton in the United States will grant the seller an allowance of 7 pounds for each bale of cotton wrapped in cotton bagging. This allowance is intended to indemnify cotton producers for the difference in tare between bales wrapped in cotton and those wrapped with old-fashioned jute or burlap bagging. The allowance also will eliminate the source of much confusion arising throughout the industry because of the substantial increase in use of cotton bagging for bale covering made necessary by the war.

Shortages in supplies of jute bagging and sugar bags for re-use as cotton bale covering made it necessary for the Department of Agriculture to subsidize the manufacture of 4,000,000 patterns of cotton bagging in order to cover the 1942 crop. This meant that approximately one-third of the crop would necessarily carry a substantially lighter tare than usual and that unless the producer was compensated for this lighter covering, he would be penalized for using cotton bagging. The shipper could not afford to make the weight allowance to the seller unless he knew definitely that he was going to sell 100 per cent of the cotton purchased to the group of mills who had agreed to make such allowances to him. Consequently he was not prone to compensate the producer at the time of purchase. It was to eliminate this source of confusion and agitation within the industry that the new uniform addition to all trade rules was proposed by the National Cotton Council.

Hugh M. Comer, chairman of the Council's committee on cotton bale covering, explains that, "The addition to the trading rules is a much more satisfactory plan than was the net weight trading law proposed through legislation. With the allowance established in the trading rules, a farmer who takes to market a bale of cotton wrapped in cotton bagging will be told that 7 pounds will be added to the gross weight of his bale, whereas under a net weight law the buyer would be required to deduct 22 pounds from the gross weight of a jute-covered bale."

Procedure making the allowance possible involved a change in the Southern Mill Rules, formulated by the American Cotton Manufacturers Association and the American Cotton Shippers Association, with endorsement in the New England Terms for Buying and Selling American Cotton, and approval of the various associations and exchanges involved.

◆

Fiber Society Cancels Plans for Convention

The Industrial Fiber Society, which had its first meeting in Atlanta last December, had planned to have the next meeting in New Orleans next November. The executive committee has decided that in the light of the request from government authorities that travel be restricted, and also by reason of the difficulty many people are experiencing in leaving their work for even a few days under the pressure of war-time production, that it would be advisable to cancel the plans for this meeting. There will, therefore, be no meeting of the Industrial Fiber Society for the duration of the war, it is announced by W. R. Marsden, director of fiber research, Bibb Manufacturing Company, Columbus, Ga., one of the officers of the society.

◆

Seventh Edition of Welding Handbook

The seventh edition of "Procedure Handbook of Arc Welding Design and Practice", published by The Lincoln Electric Company, Cleveland, Ohio, has just been published. It is greatly enlarged, containing 1,308 pages, and 1,810 illustrations including photographs and drawings, with semi-flexible simulated leather, gold-embossed cover. The price is $1.50 per copy in the U. S.; $2.00 elsewhere.

The authors have made every effort to provide as much complete information as possible to help the men in the shops, shipyards, airplane factories, ordnance plants and arsenals to produce to the fullest extent in the war effort. The book explains more fully than ever before the various methods and techniques used in welding, with a view to speeding up welding design and engineering and to make it easier for the thousands of men in training to learn the essentials of welding in the shortest possible time.

◆

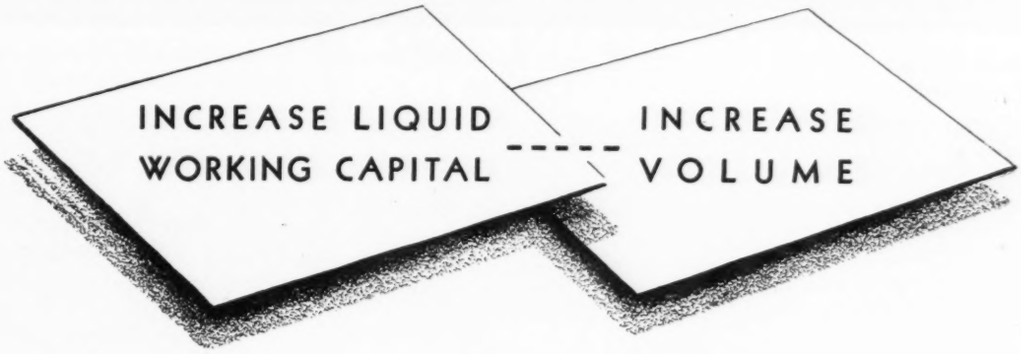
Looking After the Stragglers

(*Continued from page 77*)

boss weaver blew up and bawled the secondhand out. He had the proof; he had fixed a loom that was knocking-out filling. He even took the secondhand to the loom and showed him that there was no more knocked-out filling in the can.

Now the truth of the matter is this: The weaver had taken this knocked-out filling out of the shuttle on the loom just opposite and put the bobbins in the can herself. In the meantime, the fixer had fixed the loom that was knocking-out the filling. The boss weaver was the laughing stock of the whole room. After he got mad and blew up nobody would tell him the truth of the matter, and the chances are that today he will tell you to tighten the check strap on the off end from the battery to stop knocked-out filling.

This straggler subject could be carried on and on. We even have whole mills that are stragglers, but perhaps I have gone far enough to start some new line of thought. Perhaps we will pick up quite a bunch of valuable stragglers.



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CURRENT TEXTILE TOPICS

Production Flow Recent Problem

RAPID STRIDES in the war production program generally have brought their own problems which reached a critical point in the summer and instigated drastic efforts toward correction. August saw various phases of maladjustment, including even such elements as getting ahead of the schedule in some cases. Which led Mr. Nelson to voice the slogan that we must "go forward and in balance."

Cotton manufacture had its own production problems that concurrently beset mill management. Uncertainty of labor supply through migration; with no freezing of workers in their regular jobs, has disturbed the mills more and more. The past two months have seen interruption to output from vacations. These are said to have become more frequent because of the increased earnings of workers. Many workers, morever, have been lost to the armed forces.

It was felt in cotton goods circles, moreover, that a grant by WLB of the general wage increase proposed would mean that the industry had reached the peak of wartime production. This grant would bring practically a doubling of wage rates since the war started abroad three years ago this month. Relaxing of ceilings in goods prices to correspond, it is indicated, would not solve the production problem.

Would Make Civilian Goods Prohibitive

Authorities in the trade felt that the granting of this wage increase (at the time of writing it was reported that an increase of 7½ cents an hour was approved by the WLB) would promote strong demands for a high cotton loan, thus starting the old upward spiral of prices. On the other hand, cotton goods are always subject to a natural price control: the "ceiling" which the public puts upon such merchandise by refusing to pay more.

Mills pointed to increased taxes and other increased costs (including voluntary wage increases already given) as factors for sharply decreased earnings in the first half of 1942, compared with the like period of last year. They decried arguments to the effect that "substandard" wages are paid in textile mills, asserting that on a basis of relative skills and of living conditions in different places, the comparisons were not justified.

Another obstacle to the forward program of production in cotton manufacture is that the "adoption" of the carpet mills for duck manufacture has not worked too satisfactorily. Here also a labor problem is involved. Not only is the scale relatively high, but carpet workers do not handle as many looms as do regular duck weavers.

Interest Confined to Priority Lines

Through the summer it was reported in the goods market that mills had substantial amounts of production for the latter part of the year remaining unsold. This indicated that more goods could be alloted to civilian trade consumers, but little developed along that line, although a persistent lull in buying of military goods by the government was experienced by mills.

Offerings of goods were confined chiefly to those on a priority rating, in spite of the limited number of these up to the month in review. The hesitation to take civilian trade orders was a logical reaction to the seriousness of war developments, betokening a maintenance of or expansion in the military requirements.

Mills were looking for new business in volume from the beginning of the fiscal year, July 1, but the first activity was a moderate request on August 3—20,000,000 yards of printcloths broadcloths and pocketing twills. However, this was expected to be the forerunner of more and mill men were confirmed in the wisdom of refraining from extensive civilian trade commitments.

• This is the new Army raincoat in which rubber is replaced by Saflex, a tough, resilient plastic developed originally as an interlayer in safety glass. The coat is two pounds lighter than the rubberized coats now issued and approximately 1¾ pounds of crude rubber are saved by the use of the plastic Saflex, one of the group of synthetic resins known as vinyl acetals, is a product of the Monsanto Chemical Company, St. Louis, Mo.

Full Mill Support Urged on Government

With more than 13,000,000 bales estimated officially in August for the cotton yield, it was figured in the trade that the raw material position was assured for all wartime needs including civilian. The forecast was hailed as indicating cotton as a stabilizing factor in the mill outlook, which would be upset only by possible wage and loan moves that would be inflationary.

Meantime, talk of a revised procurement policy and more frequent purchases of military goods had created some doubts on the efficacy of monthly buying in cotton lines. It was stated that it is impractical on many cloths to set up production for monthly quantities.

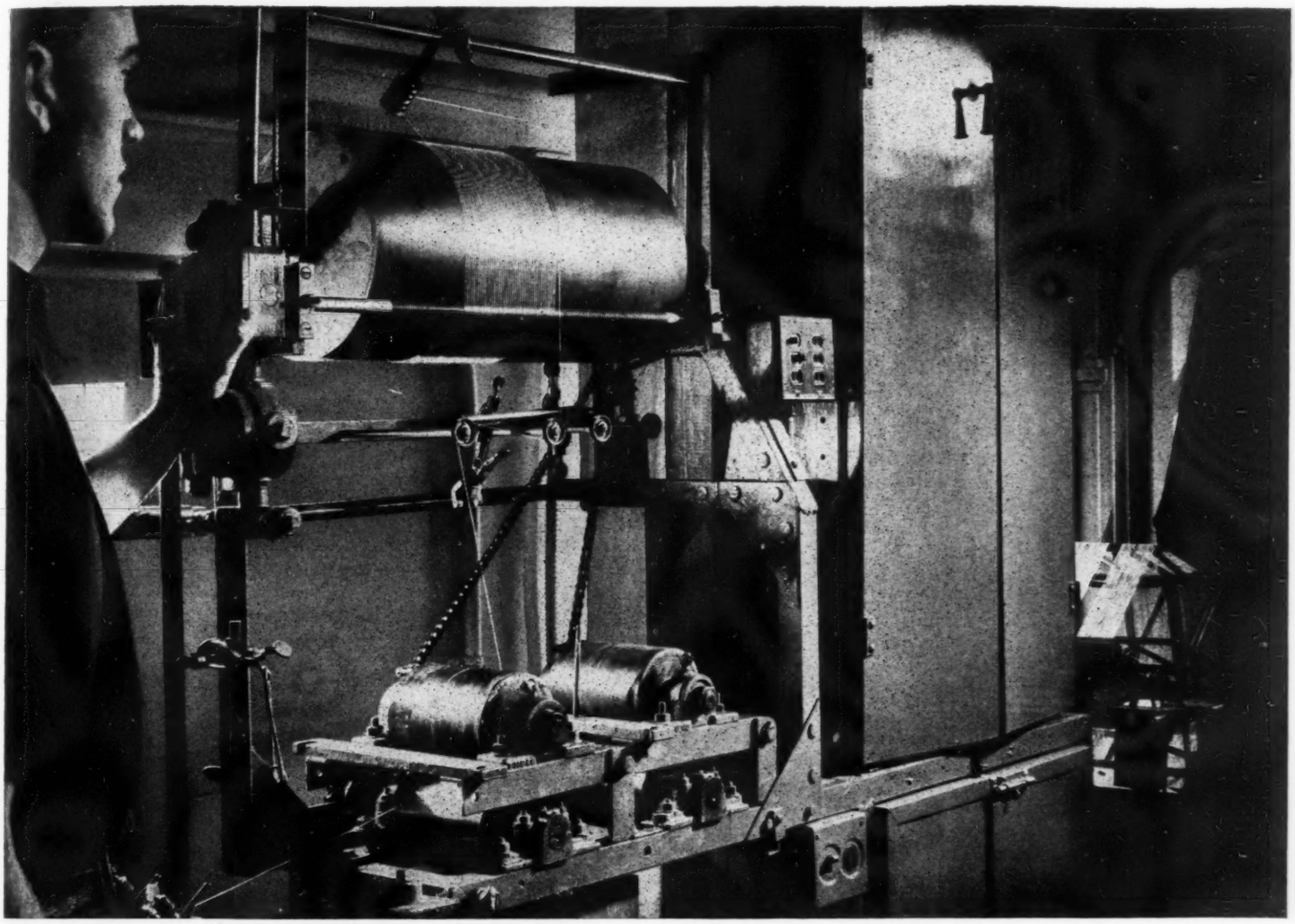
One thing deemed important in the trade, however, is that the policy should be calculated to preserve the gains made by mills in converting to the war economy. Trade leaders feel that unnecessary new problems would arise if the government failed to support operations of all the machinery that has been converted to war needs until indubitable signs appear of the end of the conflict.

New England Mill Situation

COTTON MILLS of the northeastern area have been struggling along under a combination of conflicting conditions through the past month. Buyers of civilian lines who had anticipated increased offerings through lessened pressure from the government have been disappointed. Price, wage and other labor conditions have become more complicated.

As to the goods market, mid-summer reports on the prospect that the government might at any time request lighter shipments against contracts with mills gave some hopes to the civilian trade. Contrarily, however, the reports of mid-August indicated a gradual increase in diversion of fine-goods looms from civilian lines as government demands in the form of ne-

We couldn't buy it—
so we built it!



YARN SLASHER — When it was found that no standard laboratory yarn slasher was available, our laboratory research men devised this ingenious machine which closely approximates textile mill equipment. This machine is used in sizing, coating, impregnating and finishing yarns. Through precise control of time, tension, temperature, and drying rate, mill results are obtained under laboratory conditions. Although the photograph shows the yarn being can dried, the equipment may be converted for use as an air dryer. After treatment and drying, the yarn is automatically wound in skeins on the frames at extreme right.

WHAT IS YOUR PROBLEM? Is it a question of yarn sizing, dye penetration, gray goods desizing, or fabric finishing? Whatever the problem, the Rohm & Haas Sales Service Laboratory is prepared to offer its suggestions.

In this modern and complete textile laboratory there is a specialized piece of equipment for testing and checking every plant operation. If a standard laboratory machine is not on the market, our technicians have designed equipment to accomplish the desired result.

Tell us about your problem and the wheels of this miniature textile plant will begin turning in search of a satisfactory solution.

TRITONS—*Synthetic detergents, emulsifying, wetting, and dispersing agents.*

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RHOPLEXES—*Aqueous resin dispersions for finishing and coating fabrics.*

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PROTOLIN—*Stripping agent for wool stock and piece goods.*

FORMOPON—*Reducing and stripping agent in acid systems.*

LYKOPON—*Reducing and stripping agent in basic systems.*

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gotiated contracts appeared.

Occasional emergence of surplus military cloth was indicated, but the aggregate was of little consequence in meeting regular trade demand. A limited flow of yardage to consumers on allocation was evident. Offerings were generally confined to stock and mills were not making commitments against future production.

Combed Yarn Earmarking Postponed to Nov. 2

Spinners of combed cotton yarns not working on government contracts were given an extended period in which to secure such orders and to earmark their production for military use, by an amendment issued on August 3 to M-155. By this amendment, all mills will after November 2 be earmarking 40 per cent of their medium combed and 65 per cent of their coarse combed yarns for military uses.

Manifestly the vital combed yarn goods have been becoming more essential as the war intensifies and will remain so until the end approaches. The field of aircraft fabrics seems especially to have taken up attention of the trade during the summer weeks, with heavy demands forecast for fine cotton goods mills in the coming months.

In connection with the moot subject of a second front in Europe, there was much talk of big demand for cloth to go into glider construction. Secrecy obtained as to the extent of glider construction, but it was reported that some mills had extensive orders for fine goods, which require high standards in quality of material, in spinning and in weaving.

Labor Restrictions Remain an Obstacle

Conversion of cotton mills to military requirements, by and large, was accomplished long ago with comparatively little trouble from the purely manufacturing angle. Recent figures indicated that plants in New Bedford were 40 to 100 per cent on government lines. Those in Fall River are said to average around 75 per cent on such constructions.

New England manufacturers, however, have continued to face a problem in labor restrictions and shortage. As authorities in Rhode Island and elsewhere viewed it, this recently had become the No. 1 problem in the program for carrying on the big procurement program of the country, let alone meeting civilian trade requirements in cotton goods.

While men have been lost to other industries and have been taken in the draft, rigid laws have been maintained in this section regarding work by women in the mills. Certain relaxations have been allowed the labor directors of Massachusetts and Rhode Island, but up to this month the limit of 48 hours a week has been retained for women in spite of increasing dependence upon them.

Strikes, holidays and vacations—also absence from work by many married women who take a day when their husbands also are off—have obstructed in varying degree the full production through the summer. Sporadic strikes continued in this area right into August.

Manufacturers Decry Government Policies

Under the government policy of ceiling prices for processed goods and refusal to put a check on wages—on the contrary raising the rates for mill workers—the industry is operating on a narrowing margin. It is charged, moreover, that the ceilings do not make proper allowance for differences in quality of goods and so put a premium upon cheapness in production.

Mills here are left little opportunity to capitalize on civilian business in moderate volume, to compensate for the large orders taken from the government at modest profit margins. They have been much concerned, moreover, about new negotiations on government lines in view of indications that the terms would not allow for all the cost factors involved.

Statistics of cotton consumption in July and for the year ended that month, meantime, were significant of the effort by the mills of New England to meet the challenge of tremendous production for the war program. In the face of obstacles, the total for July was 113,130 bales, compared with 110,159 a year before.

Cotton consumption of the district for the season of August 1, 1941-July 31, 1942, was 1,313,540 bales. This total compared with 1,147,384 bales for 1940-1941 and 918,313 bales for 1939-1940.

"THE SITUATION" as Seen Across an Executive's Desk

The War

August 18, 1942.

AS THIS is written, the storm clouds gather with increasing intensity. The end of the war is more remote and its accomplishments for a victory for the Allied Nations become increasingly more difficult. The Japanese scuttle about in the Pacific like evil omens casting their spell and power over important areas in the innumerable islands which they know so well. Their action has cut off some of the most valuable materials in our war needs and, at the same time, has given to them a source of materials and sustenance that makes them occupy a stronger economic position than they did before they entered the war. Their military strategy has been seemingly successful so far.

The Indian situation today is dark and foreboding. The ultimate outcome is uncertain. England seemingly waited too long to solve her Indian problem and now that war has entered the picture the solution could become impossible, thereby making India an asset for the Axis Nations and a liability for the United Nations. China is not pleased with England's handling of this situation. India is almost the connecting link between Germany and Japan. It could lend itself as an isthmus connecting the two totalitarian powers. Such a situation is more critical because the Russians have been unable to withstand the forays and onslaughts of the Germans who are pushing their mighty forces into rich areas of food and oil and making slaves and workers out of their captives.

In England, to attempt a second front or not to attempt it, is the question, while the successes of the Axis forces continue. The bombing of the cities and industrial areas continues as a weakening and possible opener for such a front. It must not be forgotten the terrific bombings that England endured and now it seems stronger and more united than before. There is so much ignorance and mystery among the peoples. There is so much propaganda and it is so conflicting that no one knows what to believe. It is an evident fact, so far, that the Allies have not yet begun to win the war.

Africa still is a draw game with seemingly no possibilities of an early victory for the Allies. With the Germans pushing to the Caucasus, the Caspian Sea and the Black Sea, a possibility of possessing the rich fields of Iran and Iraq, there is a possibility of African invasion from that source.

In our own country, WPB and OPA, politics and a still too commercial population struggle on trying to prepare for the war needs. Men and material flow in a steady stream wherever the government orders. Labor furnishes its threats to the war efforts by its constant and unreasonable

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Cotton bagging—to disguise power plants and munitions factories on the production front . . .

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You, and every mill in the Textile Industry, face the urgent need for producing thousands of yards of cloth for camouflage. It's an extra job—in addition to your full-time responsibility of clothing and equipping America's fighting men.

Mill engineers and superintendents are meeting the challenge of production by keeping their mechanical equipment at top-notch efficiency.

In the Wet Finishing Department of leading textile mills, Butterworth Machines are working day and night. The cooperation of Butterworth Engineers is freely offered to every mill seeking to achieve increased productive efficiency . . . or to repair or replace worn-out or obsolete equipment.

While Ordnance production has first call on our facilities, we are still building Textile Finishing Machines as required in America's great war program.

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PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

demands and threatens to destroy the economy by demanding wage rates which, if unchecked, will mean uncontrollable inflation.

The rationing systems, instead of being nation-wide, in many cases, are applying only to sections or areas. This is supposed to be a democratic nation in which, under duress of war, all share in like proportions.

Many people think that Germany has had a second front on the Atlantic Seaboard for some time. The 420 vessels, the major part of which were sunk in this area, are a strong indication that this is true. Only lately, in the Carribean and Southern area, this submarine warfare has become more pronounced. So far, this nation has seemed unable to combat its ravages, which at last, if not now, could make a very weak point both in our offensive and defensive plans.

We shall not lose, however, we are a powerful nation and a valiant nation. We were so far removed from the ideas of war and so engrossed in politics and commercialism that it has been a gigantic undertaking to change the psychology of this nation. It is changing gradually. With a few more reverses, when the clashing arms of the Axis nations get closer to our shores, this nation will forget everything but war and freedom and the invaders will be thrust back. America in many of her attitudes is still sleepwalking. It must awake and forget all else that does not contribute to safety.

Cotton Comments

An indicated production of 13,085,000 bales in the United States is shown by the Crop Reporting Board as of August 1. This is predicated on a condition of 79 per cent of normal and an indicated yield of 266.7 pounds per acre. The average loan rate on 7/8-inch Middling cotton will be 16.02 cents per pound, based on a parity price of 18.85 cents for August 1, 1942. Last year the average loan rate was 14.02 cents per pound.

The following extracts are from the Department of Agriculture publication "The Cotton Situation":

"As the 1942 cotton picking season gets under way, farmers are confronted with grade and staple premiums and discounts entirely different from those in recent years. On July 24, last year, differences in value between 500-pound bales of Middling and Low Middling at Memphis were $8.25 for 1-inch cotton, $9.25 for 1 1/16-inch cotton, and $12.75 for 1 1/8-inch cotton. By July 24, 1942, these differences had increased to $18.25, $24.50 and $34.00 respectively.

"During June consumption of cotton

Pin-tucking and bright stitching are effective accents for a young date dress in Tecala crepe. The fabric is a dull-worsted type from Julliard, woven with Eastman crimped acetate rayon. Courtesy, Tennessee Eastman Corporation.

was 966,900 bales. This was about 10,000 bales more than in May, but 32,000 below the record consumption in April. For the 11 months August-June, consumption totaled 10,169,000 bales, an increase of 1.4 million bales, or 16 per cent over the previous record established last year for the 11 months.

"The quantity of cotton in public storage and in compresses has declined considerably, totalling 8,459,000 bales on June 30, compared with 10,575,000 a year earlier, a drop of 20 per cent.

"The consumption of American-Egyptian cotton is running at the highest level for many years. For the first 11 months of 1941-42, monthly consumption of American-Egyptian cotton ranged from 2,430 bales to 4,951 bales per month, and totalled 41,880 bales. This is an increase of 76 per cent over the corresponding period last year, and the largest consumption for the period since 1922-23. During the past two months consumption of American-Egyptian cotton averaged almost 4,300 bales per month compared with an average of almost 4,600 bales during the preceding 4 months.

"Producers of American-Egyptian cotton were asked this spring to expand production up to the limit of the seed supply, and present indications are that the response was complete. As a result, the July 1 acreage was 207,500 acres, a 51 per cent increase over 1941, and a 202 per cent increase over 1940.

"Because of fear that the yield might be low again this year and because of the increased profitability of other crops, the acreage of Sea Island cotton declined from 38,900 last season to 9,500 this year."

Modification of Mill Rules

On May 2, 1942, the American Cotton Manufacturers Association at its convention in Atlanta, Ga., passed the following resolution:

RESOLVED, That the American Cotton Manufacturers Association hereby approves, without recourse to the usual procedure of conference, the inclusion of a provision in the Southern Mill Rules of 1935, making an allowance to the seller of seven (7) pounds per bale on cotton bales wrapped in cotton bagging.

"This resolution shall become effective at the direction of the Board of Government when and after the various associations and exchanges listed below have agreed and incorporated in their trade rules governing the buying and selling of American spot cotton in this country a provision requiring that the buyer make to the seller an allowance of seven (7) pounds per bale on cotton bales wrapped in cotton bagging, so that the farmer will definitely receive the benefit of the allowance at the time he sells his cotton:

"National Association of Cotton Manufacturers, American Cotton Shippers Association, Atlantic Cotton Shippers Association, Southern Cotton Shippers Association, Arkansas Cotton Trade Association, Texas Cotton Association, Oklahoma Cotton Association, Arizona and California Association, Memphis Cotton Exchange, Houston Cotton Exchange, New Orleans Spot Cotton Brokers Association, Galveston Cotton Exchange, Augusta Cotton Exchange, Little Rock Cotton Exchange and New England Cotton Buyers Association."

Since that date all of the associations and exchanges mentioned in the resolution have endorsed or adopted the resolution. The board of government of the American Cotton Manufacturers Association, by a mail vote, authorized the enactment and application of the provisions of the resolution effective August 1, 1942.

The following rule, approved by the American Cotton Manufacturers Association and the American Cotton Shippers Association, has been ordered as an insert to "The Cotton Mill Rules of 1935". It will appear in the rules as follows:

VII-A. COTTON WRAPPED IN COTTON BAGGING

On cotton produced in the United States when wrapped in cotton bagging that conforms, on a weight basis, to the present United States Government Standards for cotton bagging, buyer shall make an allowance to seller of 7 pounds per bale on each and every bale wrapped in cotton bagging. It is incumbent upon the seller that he has made a like allowance in his purchase of the bale.

The fight at last has been won, and the cotton grower can use Cotton Bagging without loss. It is known that cotton bagging is in every way superior to jute, or gunny sacks. Cotton spinners much prefer cotton covered with cotton bagging.

The Man-Power Commission

The pressure on the Man-Power Commission to start its long delayed Man-Power mobilization program is increasing. The Tolan Committee report indicated that, unless the commission acts soon, its functions are likely to be taken over by the armed services.

Reluctance on the part of the commission to act on its mobilization program is said to be caused by its fear

of labor opposition to some of the proposed measures. The agency also considers that it lacks some of the necessary authority with which to centralize authority over man-power problems.

The shifts in labor due to competition for workers is one of the most acute problems awaiting solution by the War Man-Power Commission.

In the textile industry, occasionally there are rumors of certain tactics that smack of labor piracy. Just how the commission's efforts will influence the textile industry is not known. Whether or not it will include the textile industry is not yet known. It is reasonable to expect that its provisions will extend to this field.

Textile managers should study very carefully their employment policies, so that there may not develop any flagrant ill that will need the attention of the commission.

According to the press, the commission will not likely function until after the November elections, unless its functions are taken over by the armed services.

To inject a casual remark, it is interesting how many important problems dealing with labor are being deferred until after the November elections. This smacks strongly of political problems having more importance than war problems.

America's present salvation lies in the hands of the industrialists much more than in the hands of the politicians. The peace table will require the presence of international statesmen and not politicians.

Wage Fixing vs. Inflation

The conflict of wage control which is being agitated so actively now in many places and areas, and particularly in the offices of OPA and WLB, seems to indicate that some general policy may be developed.

Mr. Henderson says that his price control is being rapidly undermined by the constant spiraling of wages and demands that either his office or some other authoritative body or agency shall be placed in control of wages.

William H. Davis, chairman of WLB, has been waging a terrific fight with Administrator Henderson, trying to defend himself from his attacks and his demand for a new control agency to stabilize wages.

The WLB makes several contentions. First, that it has power to adjudicate wages only on the limited cases that come before it because of wage disputes. Second, it has no power over wage increases made outside of its domain, either by voluntary raises or by union pressure. Again, it says that if universal wage stabilization is to be attained, the board's formula developed in the Little Steel case should be applied "universally and uniformly".

Out of the growing controversy being augmented by consumers and producers alike who must ultimately suffer the consequences of this "hit-and-miss" wage policy, it is thought by many that the government through some agency will exercise a control over all wages.

Last April, the President in outlining and discussing his seven-point anti-inflation program, indicated that the War Labor Board would control all wages by checking wage increases.

This statement was made some time ago and much experience has developed since that time. Chairman Davis of WLB feels that he does not have sufficient power or scope with which to deal with the problem. President Roosevelt wants this controversy removed from his responsibility insofar as it is possible, so he, according to reports, wants Congress to pass a special measure making wage control mandatory and dealing generally with measures to prevent anti-inflation.

It is rumored in Washington that the President has been advised by Attorney General Francis Biddle, that under his existing emergency powers—past and present—he can delegate to Federal Price Administrator Henderson sufficient authority to fight the inflationary movement that is now sweeping the country.

The President has also been informed that if he asks Congress for anti-inflationary legislation that OPA powers will be curtailed.

The President must make a decision between political expediency and economic necessity. It is generally believed that he will act in the interest of economic necessity because of public demand and the dangers to the economic system.

History Repeating Itself

Every one thinks or knows that our present government is a labor government if any one classification should be given to it. It has passed from a government of men who were employers to men, who, in a large measure, are employees. The labor policies now are evident everywhere.

In England they went through a period of the landed gentry, the manorial class, then came the period of commercialism, with its business men and industrialists, then came its labor government, finally displaced or modified by a union of the interests of labor and those of the industrialists, now England is entering a period in which the consumer or "the little man" is going to play a vital part.

If the early government of this nation partook of any definite classification it was that of the agriculturalist or the farmer group. Along with the industrial revolution came the period of commercialism with its business men and industrialists. At the present time, labor has it and is riding "high, wide and handsome" with indications rather markedly showing signs of a fusion of business and labor.

Wm. H. Davis, chairman of WLB, is waging a strong fight to secure possession of the machinery of national industrial wage control. Many members of organized labor would like to see certain forms of wage arbitrations and determinations lodged with a federal agency.

Mr. Davis, in a statement published recently with the Twentieth Century Fund Survey, says "What we principally need now is more organization among employer and management groups. Such organization would do much to promote an equality of bargaining power between management and labor."

It was Chairman Davis' opinion that there is a strong trend toward regional collective bargaining contracts. He stated, "Industry-wide collective bargaining seems a logical next development. It makes for greater stability throughout an industry, more responsible unions, and puts management on a more fair and equitable competitive basis so far as wages are concerned."

The North and East seem to be fairly well organized and in those areas are the greatest number of workers. According to the press, a union of the CIO and the AFL would represent a body of approximately eleven million workers. These figures are rather impressive and the thinking of the public is further impressed by the fact that Business Week (August 1, 1942) carried on its front page the pictures of Wm. P. Witherow, president of the National Association of Manufacturers and Philip Murray, president of CIO, Eric A. Johnston, president of United States Chamber of Commerce, and William Green, president of AFL, indicating that these gentlemen had had a conference with the President.

"Straws indicate the course of the wind" and history tends to repeat itself. The general trend indicates that the lion and the lamb are trying to find a pasture in which they can live happily together until their dictates are supplanted by another group.

The Labor Board Textile Decisions

The directive order of the WLB in re the southern cotton textile mill cases referred to for consideration seems to

have established the following information:

1. The wage differential is legitimate and even if it were not the WLB has not the information or power in the present hearings to look into the matter with any degree of fairness. The opinion, written by George W. Taylor, vice-chairman of the Board, said in part:

"The facts indicate that as a result of the difference in wages paid, Southern mills do have lower labor costs than the Northern mills. Recognizing that the two areas have specialized within recent years, to large extent on different fabrics, it is not an easy matter precisely to estimate the cost significance of the wage differential. In addition, there are operating differences. This problem of differential cannot be satisfactorily approached by the simple expedient of arranging wage rates so that equal average earnings are produced for Northern mills and for Southern mills.

"The fact remains, however, that North-South differential in wages is not an unusual relationship. On the contrary, it is a long standing relationship. Even if all of the facts are available to appraise the cost significance of the differential for comparable jobs, which is not the case, one would have to weigh the issues with care. Operating to a large extent as a war industry, there has been a marked change in the overall competitive picture."

2. The WLB did not rule on the question of sub-standard wages in the industry but made its recommendation for the increase in wages on the basis of living costs, including standards in terms of minimum budgets of health and decency. It was considered that current wages in the cotton textile industry as compared with wages in all other manufacturing industries, are inadequate to maintain the necessary peak of efficiency which this industry requires in the prosecution of the war.

3. The directive order states that the Southern mills shall increase wages 7½ cents retroactive to June 15, 1942, and shall be credited with voluntary increases as follows:

"Woodside Mills, Greenville, S. C., certified on April 17, 1942, which gave an increase of 2½ cents per hour, effective April 25, 1942.

"Alabama Mills, Jasper and Russellville, Ala., certified March 13, 1942, which gave an increase of 5 per cent effective May 4, 1942.

"Limestone Mills, Gaffney, S. C., certified on April 30, 1942, which gave an increase of 6 per cent effective April 27, 1942.

"Erwin Cotton Mills, Durham, N. C., certified on April 24, 1942, which gave an increase of 5 cents per hour effective July 18, 1942. In this case, the 5 cents per hour should be made effective as of June 15, 1942.

"It is the intent of the Board to allow recent general wage increases as credits against the wage adjustment of this order except to the extent that such recent wage increases were made in order to comply with the minimum wage established pursuant to the Fair Labor Standards Act."

A similar increase of 7½ cents an hour was granted by the Board in the two cases affecting New England mills.

What the Textile Mills Are Doing

Monroe Cotton Mills, Monroe, Ga., have completed a new two-story addition for increased production. The installation includes about 12 new cards, a number of re-conditioned looms, winders, folders and auxiliary equipment. Other improvements, including additional individual drives, fluorescent lighting, and a new opener room and new office, have been made.

Whitney Mfg. Company, Whitney, S. C., is starting operations of a finishing plant as a subsidiary unit with plans to convert the entire property into a finishing plant at the end of the war. Robert Brindle, Jr., is treasurer and general manager, and Victor M. Montgomery is president. Machinery is being installed by the Springdale Finishing Co.

Employees of Ashland Corporation, Jewett City, Conn., were recently presented a Minute Man flag by a representative of the Treasury Department for more than 90 per cent participation in the regular purchase of War Bonds. The actual participation is 95 per cent. The total allotment exceeds 10 per cent of the payroll.

The Dixie Cotton Mills, LaGrange, Ga., are installing additional equipment in a recently-completed two-story addition, including about 20 new cards, with pickers and auxiliary equipment. The company is also making improvements in other departments, including the opener room and storage warehouse.

Russell-Watkins Corp., Graham, N. C., has been purchased by Burlington Mills Corp., which will operate it as an addition to its seamless hosiery mills division. N. M. Cranford is manager. The plant is equipped with about 40 machines for manufacturing men's half-hose and misses' anklets.

Crystal Springs Bleachery, Chickamauga, Ga., has completed an expansion and improvement program, including a new one-story and basement weave shed, about 135x150 feet, expansion in the opener room and extensions in the shipping department. About 5,000 spindles have been added.

Union Cotton Mills, a unit of American Yarn & Processing Company at Maiden, N. C., combed yarn manufacturers, have completed two new one-story additions, about 40x50 feet and 25x70 feet, for extensions in the picker room and twister department.

Nocturne Corp., Rock Hill, S. C., was recently organized to take over the Jac Feinberg Hosiery Mill, Inc., full-fashioned hosiery manufacturers. The former company has been dissolved. Jac and Abraham Feinberg head the new organization.

Vamaco Mills Co., Franklinton, N. C., have been purchased by Burlington Mills Corp. The plant contains 200 looms; it formerly manufactured towels, and it is understood the new owners will produce rayon goods there.

Pearl Mill, Inc., recently organized, has begun operations in the former Winner Hosiery Mills, Inc., Boiling Springs, N. C. The new owners will continue production of men's seamless hosiery.

Mill Art Co., Spindale, N. C., has been organized for the manufacture of canvas specialties. Initial equipment includes 8 looms and auxiliary equipment, purchased from Spindale Mills, Inc.

A new weave room has been completed at Mill No. 2 of Randolph Mills, Franklinville, N. C., and all slashing and weaving and dyeing equipment have been removed to it.

Bonita Ribbon Mills, Brewton, Ala., have installed new looms and auxiliary equipment, and added approximately 100 operatives to the working force.

It is reported that Belding Hemingway Co. has purchased the control of the Summit Yarn Mill, Lincolnton, N. C.

HOW TO MAKE YOUR LEATHER BELTS LAST LONGER!

1. Be sure the belt is engineered to the job. An under-belted drive wears out the belt before its time. Be sure to allow for proper safety factor.

2. Check the laps. Should they begin to give way, repair them with waterproof belt cement. Don't try to fix them by rivets or lacing.

3. Check the tension. Too tight a belt is hard on flexing fibers, hard on bearings. Too loose a belt won't pull the load efficiently.

4. Don't let shifters or step-cone pulleys rub belt edges, which would elongate one side.

5. Check pulley and shaft alignment. Don't run a belt that starts crooked. If it jumps off, find the reason.

6. Check the running direction. Single belts should have grain side next to pulley, with point of lap running away from pulley, rather than into it. Double belts should have inner lap pointing away from pulley, and outer lap pointing away from windage which is created by travel.

7. Nourish the belts by proper preservative. The tanner has compensated for nature's oils in the fibrous structure, but belts dry out eventually. Add a penetrating preservative that does more than merely dress the surface.

8. Watch your belt storage. Before storing away, clean your belts, cement loose edges or laps, and apply a preservative to both sides. Store them in a covered space, protected against dust and change of temperature. When putting belts into use again, give them another application of preservative.

9. Where belts are subject to frequent oil splash, as on machine tools, a water-and-oil-proof dressing should be applied to clean, degreased surface. It will prevent mineral oil from penetrating.

10. If it's a pivoted motor base drive, check the tension. Keep the pivot point located for most efficient tension.

THESE common-sense pointers on proper care of belts are covered in the new booklet "HOW TO MAKE YOUR LEATHER BELTS LAST LONGER . . . PRODUCE MORE" shown at left. Copies can be obtained by writing E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia, Pa.

Houghton's

VIM TRED and OKAY TRED LEATHER BELTING

TIMELY NEWS ITEMS with a TEXTILE SLANT

Howard Bros. Mfg. Co., Worcester, Mass., manufacturers of card clothing, have announced the appointment of **Charles A. Haynes, Jr.**, as sales representative in the northern cotton territory as well as some woolen mills in Rhode Island and

C. A. Haynes, Jr.

Connecticut. He succeeds his father, **Charles A. Haynes, Sr.**, who has become superintendent of Interlaken Mills, West Warwick, R. I. **Charles Haynes, Jr.**, has had experience in Grant Mills, Edwards Mfg. Co., Warwick Mills and Greenville Mills in New Hampshire since leaving school 12 years ago.

Rogers & Smith, Dallas, Texas, have been made as advertising agency for **The Cotton-Textile Institute.** The principal of this agency, **Herbert A. Rogers**, originated the "Cotton Freshness" campaign now being conducted by the cotton industry, under the direction of **Ed Lipscomb** of the National Cotton Council of America.

Sjostrom Machine Co., 15 Union St., Lawrence, Mass., manufacturers of "Knotwood" metallic feeder aprons", have appointed the staff of **M. Bradford Hodges**, Atlanta, Ga., as their exclusive southern representatives.

A. S. Cookman, Jr., has been transferred from the American Viscose **Corporation's** textile unit at Marcus Hook, Pa., to the company's sales office at Charlotte, N. C., to take over the duties of **S. Reed Anthony**, who has been called into Navy service with the commission of Lieutenant, j.g.

Hart Products Corp., 1440 Broadway, New York City, have been appointed exclusive sales agent for Celludye pigment color concentrates for the textile industry. These colors are manufactured by the **Celludye Company**, 1270 Sixth Ave., New York City. The manufacturers emphasize their fastness, quick penetration and high color value, and point out their use eliminates the need for additional dyeing processes; required shades are matched, eliminating the necessity for color blending. These colors have been found particularly adaptable in combination with "Permalon", a new permanent cellulose finish made by the Hart Products Corp. for mosquito netting and other knitted and woven fabrics.

Clarence E. Stevens has been made vice-president in charge of plant operations of **Norma-Hoffman Bearings Corp.**, Stamford, Conn. He has been vice-president in charge of manufacturing of Electrolux, Inc. He succeeds **Charles B. Malone**, who has become associated with another industrial business in Stamford.

James F. McNamara, mill products sales manager of **The International Nickel Co.**, has been made chairman of the board of directors of Harvill Aircraft Diecasting Corp.

Robert N. Griswold, a member of the Chicago sales staff of Calco Chemical Division, **American Cyanamid Co.**, has been appointed sales representative in the paper trade of the Miami Valley. He joined the company in 1935, coming from the Morgan Dyeing & Bleaching Co., Rochelle, Ill.

P. C. Sowersby, assistant advertising manager of the lamp department of **General Electric Company**, Nela Park, Cleveland, Ohio, has been

P. C. Sowersby

transferred to the company's Michigan division in Detroit, where he will specialize in the advancement of wartime lighting designed to increase production of war goods manufactured in the Michigan industrial area.

The Foxboro Company, Foxboro, Mass., and the **Steel Heddle Mfg. Co.**, Philadelphia, Pa., are among the firms awarded the Minute Man Flag of Merit for payroll allotment subscriptions for war bonds by more than 95 per cent of their employees. **Sonoco Products Co.**, Hartsville, S. C., likewise received commendation from the treasury department in this drive.

New Publications of Textile Interest

International Nickel Co., Inc., 67 Wall St., New York City. "Heat Transfer through Metallic Walls", a 16-page booklet from data prepared by the company's development and research division; includes information in formulae for determining overall heat transfer rates, the various factors influencing heat transfer through metallic walls, and the thermal conductivities of metals and alloys commonly used in the construction of process equipment.

Rodney Hunt Machine Co., Orange, Mass. New 126-page Rodney Hunt Textile Machinery Catalog No. TM-42, covering the company's lines of dyeing machines, washers, fulling mills, soaping machines, wringers and many other types of equipment. In addition to illustrations and descriptions of the machines, much new data on dimensions, features and uses are included.

Blackmer Pump Co., Grand Rapids, Mich. Bulletin No. 400, covering the "Ezy-Kleen" line of strainers. It stresses the importance of protecting pumps through the use of strainers in the intake lines, and illustrates with cross-sectional views and describes the operation of four types of strainers manufactured by the company.

American Pulley Company, Philadelphia, Pa. Four-page folder on "New Tight-End Conveyor Pulleys", which were described in the August issue of "Cotton".

Curtis Lighting, Inc., 6135 West 65th St., Chicago, Ill. Catalog No. 42, containing specifications and other data essential for ordering and installing fluorescent and incandescent lighting.

Power Transmission Council, Inc., 53-63 Park Row, New York City. Bulletin No. 45, a reprint from "Factory Management and Maintenance" of an article by G. Palmgren, chief engineer, SKF Industries, Inc., on "How to Get Longer Life from Anti-Friction Bearings"; including a belt speed chart reprinting from "Southern Power & Industry".

American Mutual Liability Insurance Co., 142 Berkeley St., Boston, Mass. "Safety Digest", a 56-page book on industrial accident prevention. It comprises 10 articles previously published in the "American Mutual Magazine".

Reliance Electric & Engineering Co., Cleveland, Ohio. A blotter on "Preventive Maintenance", giving in abbreviated, "to-the-point" form suggestions on how to keep plant machinery running without breakdowns or other troubles.

Calco Chemical Division, American Cyanamid Co., Bound Brook, N. J. Technical Bulletin No. 650 on "Military Shades on Cotton Thread Vat Dyed on Packages by the Pigment Method", a review of Federal specifications covering dyeing procedures supported by formulae and samplings on various weights of cotton thread.

Technical Bulletin No. 646 on "Dyeing of Olive Drab No. 3 and No. 22 Shades with Sulphur and Vat Dyes on Cotton Yarn for Webbing", containing U. S. Army specifications in addition to a comprehensive discussion of formulae and procedure for dyeing shades by package, cascade and hand tub methods, supported by samples of the dyeings on 16s/2 and 10s/5 yarn.

Johnstone Engineering & Machine Co., Downingtown, Pa. 4-page folder describing the company's line of machines for slitting, re-winding and uniform tension unwinding, for faster production of essential war materials.

Textile Operating Executives of Georgia will hold their September meeting on September 19, in the new Callaway Auditorium, LaGrange, Ga., instead of in Atlanta, Ga., as usual. The meeting will open at 9:30 A.M. Eastern War Time, and will be devoted to the problems of the industry in the war effort, and to personnel subjects. Mill men from other states are invited.

COMMENT on the COTTON MARKET

New Orleans, August 17, 1942

THE PRINCIPAL events in the cotton market since our last review were the recessing of Congress without action on the 100 per cent of parity loan and revision of the parity formula bills, Government forecast of the cotton crop and announcement of the loan rates. All except the loan were bearish in their effect on the market and caused a substantial decline in cotton prices. The lowest prices were recorded after the Government's surprisingly large forecast of the crop. At the lowest October sold at 17.83 in New Orleans and 17.64 in New York. These quotations represented a loss of $7.00 a bale since the middle of last month. The market has since made a fairly substantial recovery but is still a cent a pound under quotations current a month ago.

Failure of Congress to act on the 100 per cent of parity loan bill took a prop from under the market and was the first development to start the market on the downgrade. This devel opment induced much liquidation of stale long accounts, encouraged short selling and also induced mills to postpone buying in normal amounts.

Forecasts of a moderate crop from the private bureaus checked the selling movement and caused a fair-sized rally in advance of the Government's estimate. The private forecasts ranged from 12,074,000 to 12,570,000. Guesses of the members of the principal cotton exchanges averaged from 12,148,000 to 12,429,000.

The crop reporting board predicted a crop of 13,085,000 on an acreage of 23,554,000. This compares with last year's yield of 10,744,000 bales. Both are in bales of 500 pounds gross weight. The board made the condition of the crop 79 as of August 1. This is the second highest reported in the 19 years during which estimates have been issued as of August 1. A yield of 266.7 pounds an acre was also predicted. Such a yield has been exceeded only once and that was in 1937. Mexican labor will be imported to aid in picking the crop.

The formula apparently used in calculating this year's yield is 17 pounds an acre greater than the one used last year. Most of the private bureaus apparently used a formula in calculating their yields which was similar to the one used by the crop reporting board in 1941. That formula gave good results in predicting the yields from month to month. Last year's record shows that the board made allowances for considerable damage from weevils. The actual damage was 15.4 per cent.

This year the board assumes that weevil damage will not be half as much as last year. This accounts for its high formula. It says in explanation of the large yield predicted that its reports indicate a probable weevil damage of 7.3 per cent compared with 15.4 last year and a ten year's average of 8.3. The percentage of losses predicted by the crop reporting board with last year's loss for comparison is as follows: N. C. 8 versus 10; S. C. 12 versus 27; Ga. 12 versus 27; Tennessee 1 versus 1; Alabama 8 versus 20; Mississippi 6 versus 23; Arkansas 6 versus 11; Louisiana 7 versus 22; Oklahoma 8 versus 8 and Texas 7 versus 11.

On the other hand, the U. S. Bureau of Entomology issues bulletins as late as August 15 indicating a belief that weevil infestation, though spotted, is widespread and damage likely to be serious if the weather is favorable for their propagation and spread.

The weather bureau report for July shows deficiencies in rainfall in all the cotton states except Texas, which had an excess of 39 per cent; South Carolina an excess of 7 per cent and Tennessee with an excess of 6 per cent. Deficiencies ranged from 11 per cent in North Carolina to 61 per cent in Arkansas. This weather tended to reduce the weevil damage except in states which had an excess.

Bulletins issued by the weather bureau August 11 show that all parts of the cotton belt received general rains, with North Central sections receiving over two inches. The effect of these rains, which are apparently favorable for the weevil, may not be known until the next estimate of the Government is issued September 8.

The July parity is 18.85 cents a pound for Middling ⅞-inch on the farm gross weight. The loan, according to law, is 85 per cent of this figure. The CCC fixed the loan rate at 16.02 for this grade on the farm. It compares with 14.02 last year. The loan rate for Middling 15/16-inch net weight is 16.25 in Western sections and 17.46 in the Carolinas. Different rates are named for each section depending on freight differences. The loan rate is 16.88 for New Orleans net weight. The loan in terms of futures is calculated at 17.02 for New York, where deliveries are in gross weight bales, and 17.23 at New Orleans where the contract calls for delivery in net weight bales.

The CCC reports that 2,221,377 bales of the 1941 crop went into the loan of which 1,324,445 were withdrawn leaving 886,932 bales of that crop in the loan at end of July. Notes securing these loans have been extended indefinitely. Withdrawals from Government stocks, exclusive of the cotton-rubber barter and lend-lease agreements, aggregated 1,913,000. Government holdings at end of the season are estimated at 3,600,000. This does not include loan stocks.

The Census Bureau reports consumption in July of 995,041 bales, the second largest on record. Consumption for 12 months is given as 11,172,328, the largest on record. The Census Bureau estimates the carry-over in the U. S. at the end of July as 10,589,883 compared with 12,165,752 a year ago.

The Census Bureau declines to give export figures. CCC officials decline to predict amount of cotton which will be needed for export under the lend-lease, or other agreements, this season but admit that they have very little stock which Great Britain would want. It is intimated that most of the cotton which will be needed for export will have to be bought in the open market. Estimates of export requirements run as high as 1,500,000 to 2,000,000 bales. Domestic mills will need about 11,000,000, it is claimed.

CENSUS REPORT OF COTTON CONSUMED AND STOCKS—BALES

Consumption of Lint	This Season	Last Season
In United States, July	995,041	929,782
In United States, June	966,940	875,812
In United States, 12 months	11,172,328	9,721,703
In Cotton Growing States, July	855,375	792,576
In Cotton Growing States, 12 months	9,527,524	8,289,067
In New England States, July	113,130	110,159
In New England States, 12 months	1,313,540	1,147,384
In All Other States, July	26,506	27,047
In All Other States, 12 months	331,264	285,250
Mill Stocks		
In United States, July	2,252,690	1,876,776
In United States, June	2,441,130	1,920,197
In Cotton Growing States, July	1,773,559	1,473,873
In New England States, July	399,824	342,259
In All Other States, July	79,307	60,644
Warehouse Stocks		
In United States, July	7,632,193	9,703,976
In United States, June	8,458,912	10,574,730
In Cotton Growing States, July	7,300,449	9,299,922
In New England States, July	313,323	377,101
In All Other States, July	18,421	26,953
Active Cotton Spindles		
In United States, July	23,111,848	23,028,084
In United States, June	23,090,560	22,994,980
In Cotton Growing States, July	17,518,454	17,381,470
In New England States, July	4,957,258	5,012,458
In All Other States, July	636,136	634,154

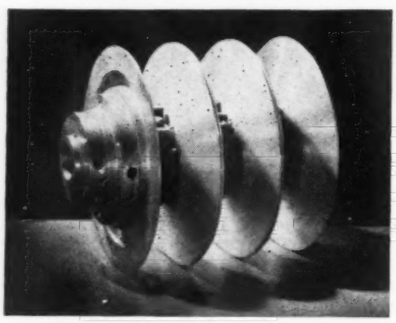
Wall Chart on Self-Locking Nuts

Elastic Stop Nut Corp., Union, N. J., has prepared a wall chart explaining the uses of its various types of self-locking nuts. The center of the chart is devoted to an illustrated description of the basic principle by which a self-locking action is obtained in these nuts. This is followed by illustrations of some of the advantages to be obtained by the use of the nuts, and completing the presentation there are cross-section drawings showing the method of application of the nine types most generally used, with corresponding photographs of these types.

NEW EQUIPMENT and MATERIALS

New Vari-Pitch Sheave Increases Speed Variations

Allis-Chalmers Mfg. Co., Milwaukee, Wis., have developed a new wide-range Vari-Pitch sheave to provide wider ranges of speed variation for power transmission required by vital textile and machine tool production under new



wartime demands. Speed variations from 66 to 116 per cent are possible with the new sheave, which is used with a companion sheave grooved for new, wide Texrope v-belts. The new sheave is manufactured in sizes to fit the shafts of all standard NEMA motors from fractional to 30-hp. Companion sheaves are made in sizes to meet the requirements of the wide-range applications.

◆

Flame-Proof Fixture for Fluorescent Lighting

Century Lighting, Inc., 419 West 55th St., New York City, announce that their new flame-proof fluorescent lighting fixture of moulded asbestos, the "Asbestoslite", a substitute for steel lighting fixtures, has been approved by the Underwriters' Laboratories. This fixture was designed for use in industrial "war" plants where complete fire resistance is required.

◆

Aligning Shaft Coupling

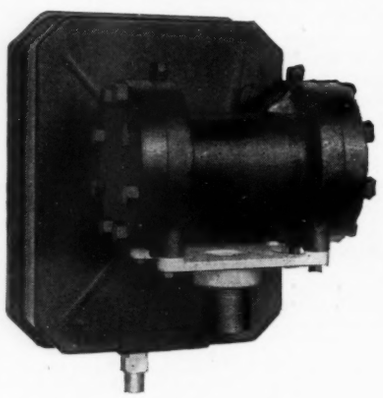
Barcus Engineering Company, 3931 Falls Road, Baltimore, Md., have announced the Barcus aligning gear coupling which permits misalignment up to 3 degrees on either shaft, or a total misalignment of 6 degrees. The coupling comprises a cylindrical housing shell cut with internal gears having stub teeth with 20-degree pressure angle. The driving and driven shafts are respectively connected to hubs of generated gears each cut on a true central segment of a sphere, the surface of the teeth being of constant width throughout their length. The teeth of each spherical gear meshing in the stub teeth of the housing produces a smooth ball action contributing to the reduction of friction and pressure on shaft bearings if the shafts are out of alignment. The specially designed spherical gear is in full mesh on pitch line with internal gear at all times and with maximum reduction of backlash.

◆

Aneroid Manometer for Flow or Liquid Level

Taylor Instrument Companies, Rochester, N. Y., have announced the Taylor aneroid manometer for flow or liquid level. The absence of mercury or other liquid from this instrument, it is pointed out, removes the possibility of product contamination and the hazard of mercury being blown due to line surges or carelessness. Further features are that sealing liquids are rarely required and vital mercury is released for the war effort.

Replacing the stuffing box is a new torque tube assembly which gives a



completely closed system and is designed so as to eliminate friction and lubrication; this new assembly also does away with lost time involved in maintenance. Friction, lost motion and wear are further reduced by the absence of internal pivots and springs.

Metal bellows respond to the pressure variations and insure faster response under ordinary circumstances with immediate reaction to sudden changes in flow. The bellows are built to withstand high over-range without damage.

The Taylor aneroid manometer is accurate within 1 per cent of scale range, it is pointed out, and is available for all types of indicating and recording meters and controllers and is supplied for standard ranges between 20 and 500 inches of water. The range can be changed on the job by substituting pre-calibrated torque tubes.

◆

3-Way Butterfly Valve

R-S Products Corp., Wayne Junction, Philadelphia, Pa., have marketed a 3-way butterfly valve for mixing and quick interchange service, adaptable to fully automatic control by means of an air diaphragm motor or hydraulic cylinder. The valve is constructed of cast steel or cast iron for pressures up to 600 p.s.i. A special feature is the self-cleaning, double-beveled, streamlined vane which seats wedge-tight against the body of the valve, thus producing a tight shut-off as well as positive control of volume and pressure.

◆

New Super Phosphor for GE Mazda F Lamps

General Electric Company, lamp department, Nela Park, Cleveland, Ohio, has announced the development of a super phosphor, with greater efficiency in converting invisible ultraviolet into visible light in fluorescent lamps. It is designed for use as a coating on the inner surface of GE Mazda F lamps, and is said to have the added advantage of employing minimum amounts of critical war materials. Known as "Formula No. 188-C3", the new super phosphor powder has already been incorporated in the manufacture of GE Mazda F lamps.

◆

New Uses for "Avisco"

American Viscose Corp., 350 Fifth Ave., New York City, have announced a number of new uses for "Avisco", the extra-strength viscose rayon staple fiber. These include fabrics for men's shirts, underwear, pajamas and neckties; men's and women's handkerchiefs and hosiery; women's dress fabrics and knitted underwear; babies' diapers; and lint-free spun rayon wiping cloths for high-grade optical instruments such as binoculars, telescopes, and Army and Navy lens equipment.

◆

New Permanent Cellulose Finish

Hart Products Corporation, 1440 Broadway, New York City, have developed Permalon, a new permanent cellulose finish available in several viscosities for many types of knitted and woven fabrics. Mosquito netting (marquisette, tricot, bobinnette and lace)

Right for Rayon
For Drawing and Roving
Armstrong's Accotex Cots—Good friction. Ready-glued for fast assembly. Uniform, seamless, oil-resistant synthetic composition. Resilient, highly resistant to flattening, aid quick start-up. Highly resistant to grooving. Long service life.
For Twisting
Armstrong's Twister Roll Coverings—Three oil-resistant types: (1) Cork Composition Throwster Roll Coverings for upstroke twisting; (2) Helically-Wrapped Cork Cots for downstroke twisting; (3) Accotex Cots for wet twisting.
For Spinning
Armstrong's Seamless Cork Cots—Extra friction assures uniform drafting. Toughness assures long life. Can be rebuffed 3 or 4 times. Most rayon is spun on these cots. (Accotex Cots are suitable for frames with revolving clearers.)
For Weaving
Armstrong's Take-Up Roll Coverings—Plain Cork Ribbon, Gridded Cork Ribbon, and Cork-and-Synthetic Ribbon offer various degrees of friction to meet any requirements. All provide uniform tension with a smooth gripping action.

BECAUSE of their superior frictional properties, high quality, and durability, the materials shown above assure increased operating efficiency and aid the production of better, more uniform rayon yarns and fabrics. In addition to roll coverings, Armstrong provides a Buffing Machine to grind cork-covered and synthetic-covered rolls; Assembling Machines (hand-operated and pneumatic) to apply cots to spinning and card room rolls; Temple Rolls and Winder Spindle Head Covers of both cork and synthetic compositions; Waterproof Cement for assembling roll coverings and other materials.

Why not get the whole story about the mill-proved Armstrong Line of supplies for processing rayon? Write for the facts today! Armstrong Cork Company, Textile Products Section, 923 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ROLL COVERINGS

processed with it has been tested and approved by Government supply departments, it is stated, and meets Government specifications. Among the features listed by the manufacturers are: low shrinkage, even penetration, the elimination of slippage, even spreading with pigment colors.

◆

New Drapery Weaves

Two new drapery weaves, with warp of Du Pont rayon and cotton filling, have been presented in vat-dyed patterns by Witcombe, McGeachin & Co., New York City. Ripple Rae, a ribbed weave, is a war-time version of this company's Toile de Rae—somewhat heavier, due to the taking over of combed cotton yarn by the Government for war needs.

A large Victorian bouquet design in this weave has a background of stripes in varying widths and in a combination of pastel colors. Another multicolor floral pattern is printed on soft blue, gray, rose beige, yellow or green, with further decoration of small flowers and rippling lines in the background color. An 18th Century shield design may be had with blue ornament on yellow ground, green or rose cedar, gray on turquoise, cedar on light olive green, or rose on a gray background. This print has been given a non-shrink, anti-crease finish.

Satin Twill, another mixture of Du Pont rayon and cotton, is shown in a colorful modern dahlia pattern, on a background of white, maize, cedar, green and gray.

◆

Self-Threading Shuttle Eye

It is announced by Eaton and Brown, patent attorneys, Charlotte, N. C., that Giles M. Teague and Joseph W. Freshwater, of Burlington, N. C., have been awarded a patent on a self-threading shuttle eye in which a plurality of spring-pressed balls normally close the shuttle eye, but in an automatic loom, these give way to the thread upon a transfer operation so as to permit the thread to enter the shuttle eye and prevent its leaving the shuttle eye.

Conservation Campaign for Tubize Rayon

The Tubize Chatillon Corporation is releasing in magazines a campaign for Tubize rayon that ties in closely with the Government emphasis on conservation. Each advertisement features either a dress or lingerie made of Tubize rayon, and gives detailed instructions for the care of the garment. This advertising, appearing in Life, Good Housekeeping, Vogue, Glamour and Mademoiselle, is placed by Alley & Richards Co., New York City.

◆

Changes in H. & B.'s Southern Organization

E. L. Martin, president of H & B American Machine Co., Pawtucket, R. I., has announced the following changes in the sales organization:

J. Carlile Martin, for many years in charge of the Atlanta office, has assumed management of both the Atlanta and Charlotte offices. Elmer J. McVey, who has been in charge of the Charlotte office, has been recalled to Pawtucket to co-ordinate and accelerate production of war materials to which the concern is devoting the major portion of its productive efforts.

Herman J. Jones, Alabama representative, has been called as a reserve officer into active service, and George W. Murphy, of Atlanta, has taken over this territory in addition to the one he previously served. Clinton M. Powell, of Charlotte, has accepted a mill agent's position, and his territory has been taken over by Fritz Zweifel, of Spartanburg, S. C., and Fred Dickinson, of Rockingham, N. C.

◆

Over 1,000 Pacific Men in Armed Forces

More than 1,000 men from the various sales and manufacturing divisions of Pacific Mills have joined the armed forces of the country. Many of them are now in active service on all the fighting fronts of the world. The 1,048 men came from the mills in Columbia and Lyman, S. C., and in Massachusetts; from the sales offices in New York City; and from the main office in Boston.

Executives of the various divisions have been sending packages of food delicacies and everyday necessities to the men to brighten their days in the service; and their associates in the company are keeping a steady stream of mail going up the line.

◆

American Viscose Opens Export Department

American Viscose Corporation, 350 Fifth Avenue, New York City, has opened an export department, in charge of John W. Geary, Jr., owing to the steady increase in shipments of rayon yarn to Latin American countries. Early this year, the State Department, as part of its Good Neighbor policy, requested U. S. rayon producers to set aside 4 per cent of their monthly production for shipment to Central and South American countries.

A Review of the Cotton Waste Market

Boston, August 15, 1942

COTTON WASTE continues to move in small lots to consumers, though there is no particular sustaining demand. The impression here is that consumption is not keeping pace with mill production and that consequently there is no encouraging outlook for cotton waste. Dealers would like a good strong market, but see no change tending in that direction. Consumer bids are all on low levels and in order to meet the situation dealers endeavor to secure supplies at new low levels. A kind of vicious circle prevails with an ominous threat hanging over the market in the shape of huge supplies coming out of the entire cotton industry.

All wastes are priced at the lows of the year and the talk about ceilings has disappeared as the desirability of a foundation under the market is given consideration. However, there is neither definite plan nor expectation of such an event and the operations of the market for some indefinite time ahead will be a supply-and-demand proposition, with the supply the more dominant factor. Many of the usual buyers in this market have been out for so long a time that some improved demand is looked for in the near future. And then again, it is always possible that the Government may find some way of utilizing spinning wastes in bagging lines and similar fabrics.

Dealers here think that there has been too much said about ceilings, maximums, and so on, and that it might do the market good to be left alone a while to recover itself. Admitting all this, say others, the price trend on all wastes is downward and until either the supply of wastes diminishes or the demand increases, there can be only the shadow of a good and stable market for the wastes and by-products of cotton.

The aggregate turn-over leaves much to be desired and yet the attractively low basis on which wastes are being offered may be expected to bring in laggard buyers just as soon as they are convinced that wastes are on a foundation which is quite unlikely to be moved. Nothing happened in the market here on the bearish August crop report which forced down spot to 19.12 cents, the low point for months. A rise of 20 points the following day indicated that the pessimism has no real basis. However, as noted, the waste market is going on its own and at this time is in no vital relation to the cost of cotton which is a very secondary influence compared with the over-supply of wastes.

There has been no general cause-and-effect relation between the decline in cotton and the fall in wastes. The percentage decline in wastes has been much larger than in the case of cotton. The market is now well deflated and there will be more opportunity for doing business on less capital. Regarded broadly from the supply-demand standpoint, opinion is rather general that it will be a consumer buying market in most cotton wastes for some long time to come.

PROTECT

YOUR FABRICS WITH

Protela

THE LONG LASTING MILDEW PROOFING COMPOUND

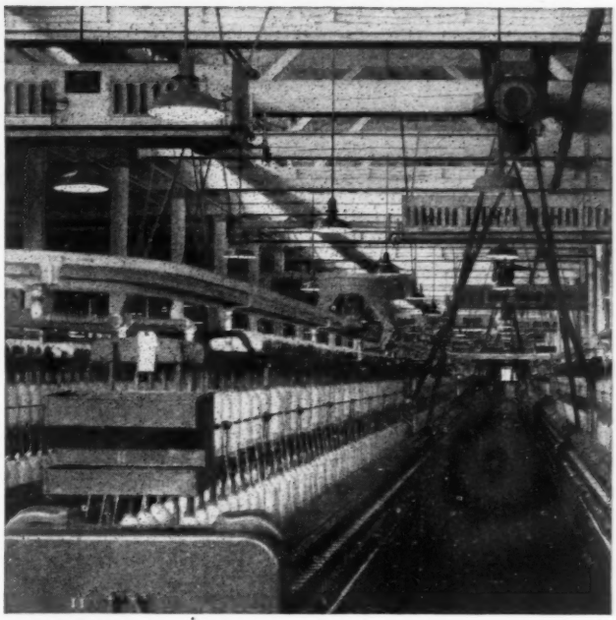
For any type of fabric made of vegetable fiber . . . cotton, linen, jute, sisal, hemp, paper . . . Protela is the perfect mold-and-mildew proofing compound. Durable . . . resists weathering. Easy and economical to apply, non-poisonous, non-inflammable. Sixty millions of yards of fabric for government use have now been successfully mildew-proofed with Protela. Protela has withstood the severest tests imaginable . . . indicating its durability under all conditions of humidity and heat, including those of the tropics.

Write for Complete Information and Technical Data on Protection.

PROTELA

Albi Chemical Corporation

9 PARK PLACE, NEW YORK



What do you expect of

Certified Climate?

Are you figuring on stepping up your machine operating speeds?

Do you expect to benefit by higher and more dependable REGAINS; more uniform numbers, of greater strength, smoother and more compact drafting; less waste and fly?

Or — even without an increase in operating speeds, do you figure that fewer stops, fewer piecings, fewer seconds will step up production?

Textile Air Conditioning results most satisfactorily when production men and Certified Climate engineers work together as partners.

Parks-Cramer Company

Fitchburg, Mass. **Charlotte, N. C.**

PERSONAL NOTES
About Men You Know

W. C. SUMMERSBY has become executive vice-president of the Ware Shoals (S. C.) Mfg. Company. He succeeds W. A. L. SIBLEY, who resigned several months ago to become vice-president and general manager of Monarch Mills, Union, S. C. Mr. Summersby for the past several years has been general manager of the Springs Cotton Mills plants in Chester, S. C. He formerly was agent of the Bates Mill, Lewiston, Maine, and previously had been connected with the former Lancaster Mills, Clinton, Mass., and the Lane Cotton Mills, New Orleans, La.

SAMUEL I. PARKER, general sales manager of Ciba Company, Inc., New York City, has accepted a commission as major of infantry, U. S. Army, and reported for duty at Fort Benning, Ga., on August 24. Major Parker saw overseas duty as an officer in World War I, and was awarded the Congressional Medal of Honor, Distinguished Service Cross, Silver Star Medal with Oak Leaf Cluster, Purple Heart with Oak Leaf Cluster, and is a wearer of the French Fourragere as an individual decoration.

THOMAS H. QUIGLEY, since 1925 head of the industrial education department at the Georgia School of Technology, Atlanta, in charge of vocational school work among the mills of the state, has become director of the U. S. Employment Service in Georgia, with office in the State Office Building, Atlanta, Ga. In his new position, Mr. Quigley will fill an important link in the War Manpower Commission's work.

BRUCE C. BAKER, for a number of years general manager of the Springs Cotton Mills plant at Kershaw, S. C., has become general manager of the company's plants in Chester, S. C., succeeding W. C. SUMMERSBY. JOHN D. GREEN, formerly assistant to E. LEE SKIPPER, general manager of the company's Lancaster plant, has succeeded Mr. Baker as general manager at Kershaw.

H. T. GILBERT has resigned as overseer of weaving at the Pepperell Mfg. Company, Lindale, Ga., to become assistant superintendent of the Exposition Cotton Mills, Atlanta, Ga. I. M. SHAMBLIN was promoted from second shift overseer to overseer of weaving to succeed Mr. Gilbert at Lindale, and C. M. HEAD was promoted from second hand to second shift overseer.

A. B. BROWN has resigned his position with the Phenix Mills No. 1, Kings Mountain, N. C., to become night superintendent of the Carter Mills, Lincolnton, N. C. Mr. Brown was night superintendent at the Summit Yarn Co., Lincolnton, N. C., before going to Kings Mountain.

PHILIP C. GOSSETT, assistant treasurer, Chadwick-Hoskins Co., Charlotte, N. C., has been commissioned as Lieutenant (j.g.) and left August 16 to take up his duties at the U. S. Naval Aviation Air Station, Quonset, R. I.

At the Hampton Division of Pacific Mills, Columbia, S. C., a number of changes were recently made in the supervisory organization:

GEORGE R. KAY, formerly superintendent of carding and spinning in the group, is now superintendent of the Olympia plant, with H. A. SHEATLEY as assistant superintendent in charge at night. J. HARMON STRAIT, formerly superintendent of weaving of all the plants, is now superintendent of the Granby plant, with G. P. DEBRULE as assistant superintendent. J. H. BURGESS, formerly of Marion, N. C., has become superintendent of the Richland plant. Mr. DeBrule was succeeded as overseer of carding at the Olympia plant by J. G. NORRIS, who in turn was succeeded as second hand by H. S. CULCLASURE, formerly section man. Mr. Shealey was succeeded as overseer of spinning at Olympia by D. B. HOWARD, formerly second hand, and OTIS MIMS, formerly a section man, was made second hand.

C. D. TURNER, formerly with Springs Cotton Mills, has succeeded J. H. YOAKUM as overseer of weaving at the Granby plant; CECIL MACABEE, formerly at The Trion (Ga.) Company, has replaced HORACE DILL as overseer of weaving at the Richland plant; and STANLEY P. COLE, from Louisville Textiles, Inc., Louisville, Ky., has succeeded J. W. ROBISON as overseer of spinning at the Granby plant. Mr. Robison is now in the general office.

H. A. NEWTON is general superintendent of this group of mills, and A. D. ELLIOTT is assistant general superintendent. STANLEY A. BLACK is in charge of the standards department.

CHARLES REYNOLDS has been promoted to general superintendent of Spindale (N. C.) Mills, Inc., succeeding GEORGE R. KAY, who as reported is with Pacific Mills, Columbia, S. C.

JOSEPH L. WRIGHT has been made superintendent of Republic Cotton Mills No. 1 and No. 2, succeeding his brother, GEORGE M. WRIGHT, JR., who has entered the armed services.

Obituary

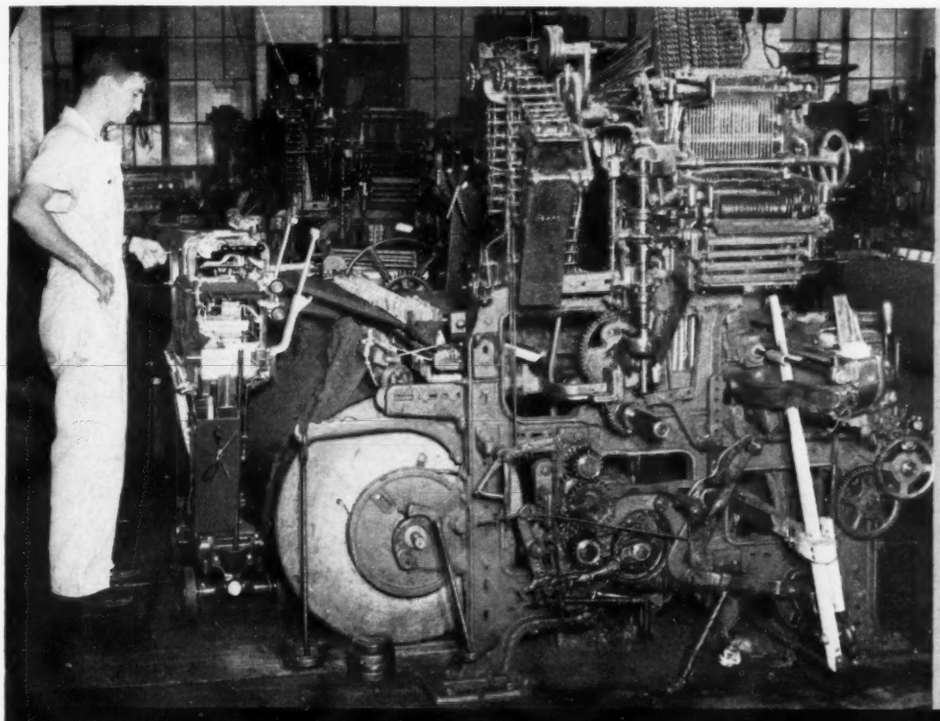
FERDINAND HELLER, 77, founder and vice-president and treasurer of Royersford Needle Works, Inc., Royersford, Pa., died on July 30, following a major operation. Born in Chemnitz, Germany, Mr. Heller came to America in 1907 and established a business in Philadelphia. In 1917 he built his first factory at Royersford. He was long identified with the full-fashioned hosiery industry in America, and was

Ferdinand Heller

the pioneer manufacturer of springbeard needles and knitting machine specialties in this country. In addition to his widow, Mr. Heller is survived by three sons—FRED, WALTER and RICHARD, all of Royersford; three daughters—MRS. R. W. BREIDENBACH and MRS. KARL NOWACK, of Royersford, and MRS. ROBERT B. SCHINDLER, of Spring City, Pa., and six grandchildren.

CAPTAIN ELLISON A. SMYTH, dean of southern textile manufacturers, died at his estate near Flat Rock, N. C., on August 3, at 94 years of age. Captain Smyth, one of the true pioneers in textiles in the South, organized the Pelzer (S. C.) Mills, and was president and treasurer for 43 years. Subsequently he participated in the establishment and operation of a number of other mills and industrial and commercial enterprises.

FRANK S. DUNHAM, 66, sales engineer for The Permutit Company, New York City, for 25 years, passed away in Chicago on July 23. He is survived by Mrs. Dunham and two children



BARBER-COLMAN

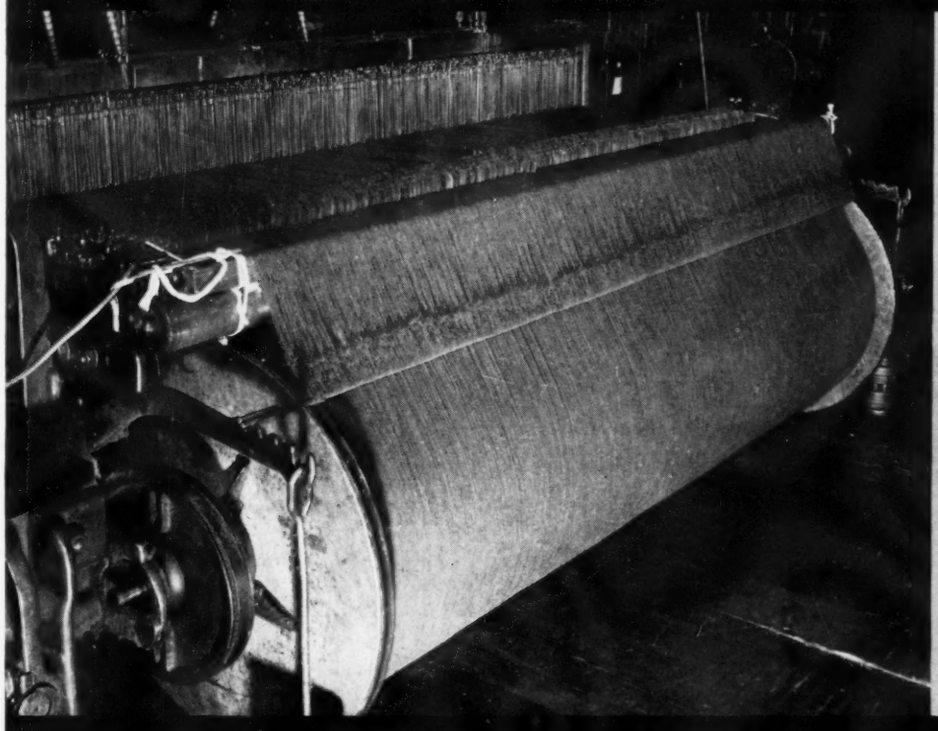
Portable

WARP TYING MACHINE

MODEL "LS"

TYING-IN WOOLEN WARPS... AT THE LOOM!

LOW COST WARP REPLENISHMENT - HIGHEST QUALITY RESULTS



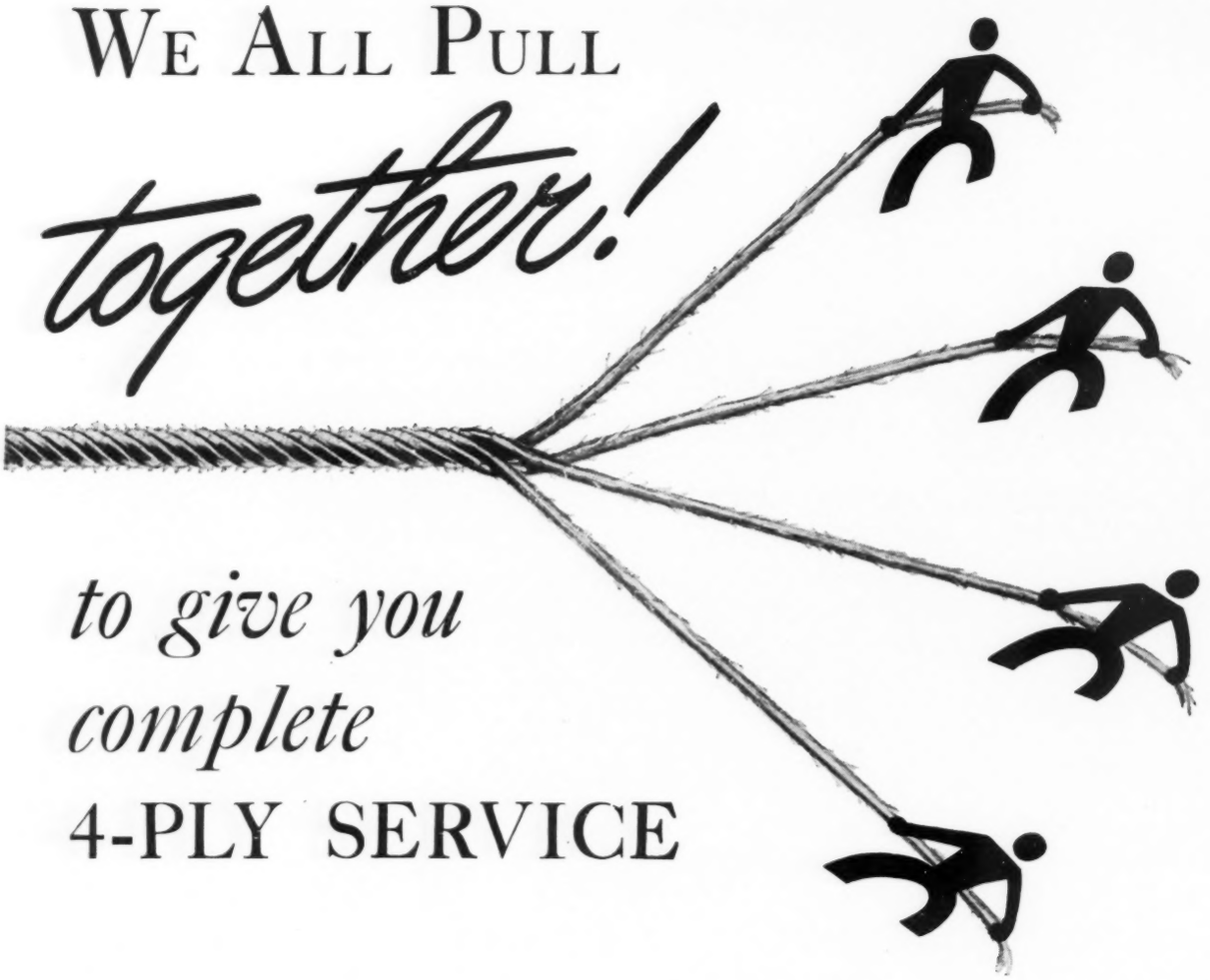
Above, operator using Model "LS" machine equipped with new tying mechanism for woolen yarns. Left, woolen warp completely tied-in at the loom. These pictures were made in a prominent mill which manufactures automobile upholstery fabrics and blankets.

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

WE ALL PULL *together!*



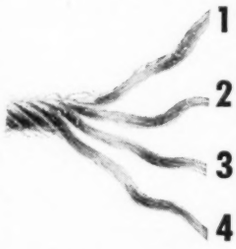
to give you complete 4-PLY SERVICE

WE BELIEVE in letting the left hand know what the right hand is doing. Thus, if one research department is working on a weaving problem, and it so happens that a *new yarn* is needed to solve that problem, another research department gets a chance to do part of the job.

The same thing is true of *fabric development* and the giving of *sales assistance*. All departments are *coordinated* to give you the advantage of expert assistance in *all* phases of textile production.

Whenever you have a problem involving rayon . . . whether in spinning, warping, weaving, knitting, dyeing and finishing, or in the development of new fabrics . . . it will pay you to bring your problem direct to a great rayon headquarters—American Viscose Corporation. Our 4-PLY SERVICE is ready at all times to aid you—without a penny's cost. We welcome every opportunity to be of service to you.

FOUR-PLY SERVICE



1 **FIBER RESEARCH**—Helps you to get the right yarns.

2 **FABRIC DEVELOPMENT**—Helps you to design new fabrics.

3 **MILL TECHNIQUE**—Helps solve mill problems.

4 **SALES ASSISTANCE**—Helps sell finished fabrics.

SALES OFFICES: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.

PLANTS: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED AND APPROVED RAYON FABRIC

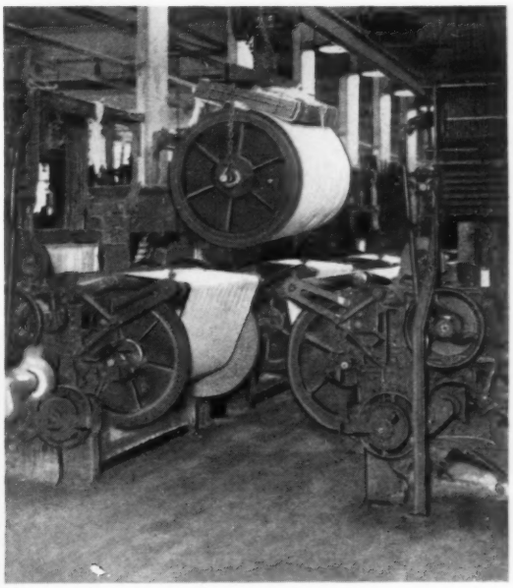
AMERICAN VISCOSE CORPORATION

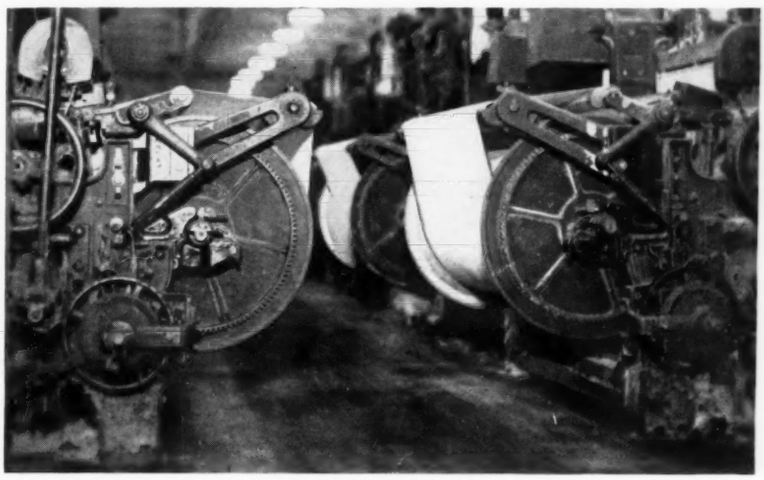
Producer of CROWN* *Rayon Yarn and Staple Fiber*

Copr. 1942—American Viscose Corp.

*T. M. Reg. U. S. Pat. Off.

LARGER BEAM HEADS *paid for themselves*





--in 2 Years

ONE textile mill recently changed its looms from 20" to 24" heads and installed tracks and trolleys over the post alleys to handle the larger beams. Within two years, the larger beam heads paid for themselves. And they've been cutting costs and speeding output ever since.

FOR GREATER MILL EFFICIENCY

A COMPOUND, built throughout with spiral gearing to eliminate back lash and to provide quieter, smoother operation.

Larger beam heads hold more yarn. Fewer beams are needed; less labor is required for slashing, tying-in, and placing beams on the loom. The looms themselves run longer. Less time-out is required for changing warps.

Even though we're busy with military ordnance work, our engineers will gladly survey your weave room, work out a program, and give you an estimate for installing larger beam heads. Now when operating efficiency is needed most, increase your output and your returns with modern installations.

Manufacturers of Special Textile Machinery--Slasher Equipment--Textile Repair Parts

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

We are Building Tomorrow's Business TODAY

When the business history of these times is written it will include stories of many who started at the top and worked down.

We refuse to be stampeded by headlines. We insist on believing in the *future* of our country and of *our* business.

We are convinced that tomorrow's business is important to consider today. In our field (Textile Paper Carriers) we can see nothing ahead to change the importance of a dependable source of supply.

WAR SAVINGS BONDS

EVERY PAY DAY

SONOCO

SERVES THE WORLD

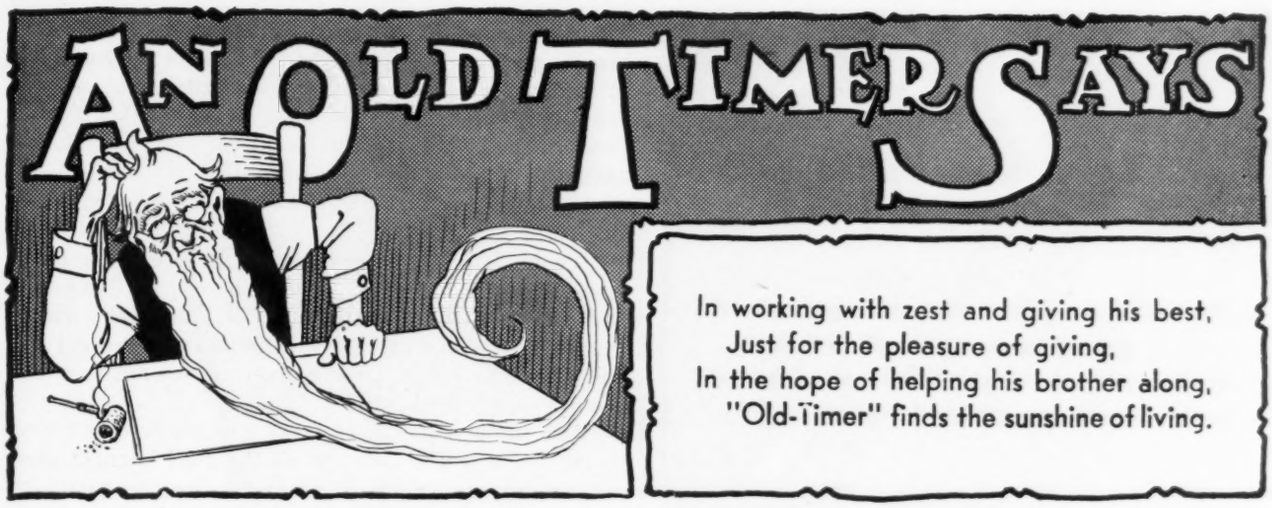
PAPER CARRIERS

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

A Loom for Testing Single Ends of Yarn

(Since this article is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER'S part in the conversation, while those in italics represent JIM'S part.)

Don't go so fast, OLD-TIMER. *You are taking me through the mill like you were afraid I might see something, and right now I think I do see something which you probably did not intend to show me.*

What's that, JIM?

That loom sitting there on the spare floor of the weave room.

Oh, that! That's our testing loom, JIM, and I'm glad you asked to see it because I think we have something there and as there are no secrets about it, I am glad to show it to you. The only reason I did not think of it was, I suppose, because we have not operated it for some time.

Well, what—

Hold on, JIM, and I'll try to explain. In making tests with different sizing compounds and starches or in making tests for any purpose, we realized that unless we made at least a kettle of size and then took every precaution not to get this kettle of sample size mixed with the regular size, we could not depend absolutely on the results.

Next, to get the best results for loom stoppage tests, it was necessary to place all the warps sized with the sample sizing on a set of looms which of course involved considerable expense in taking off the regular warps in order to replace them with the sample warps. All of this procedure took so much time and the attention of someone to be sure the test was conducted properly that we were continually asking ourselves if there wasn't some practical method we could use which would eliminate all or most of this time and expense.

This loom, JIM, we believe solves that problem to a certain extent; that is, so far as testing the weaving qualities of different sizing formulas, different starches, difference in wearing qualities of yarns slashed with minimum and maximum percentages of stretch or different percentages of moisture, different amounts of starch on yarn, etc., etc., are concerned.

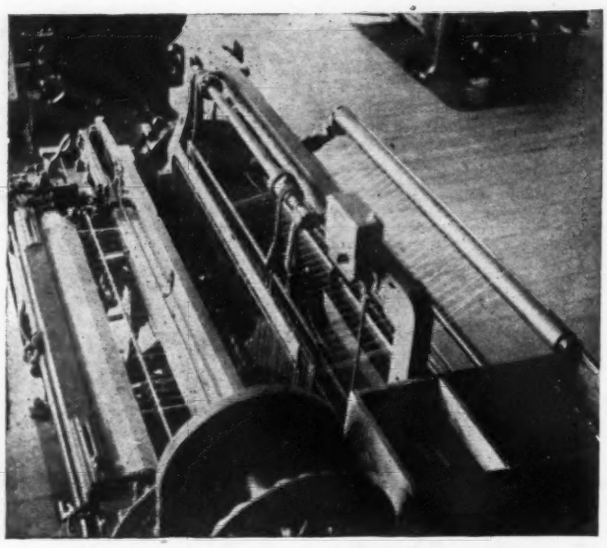
Tests made on this loom are all single-strand tests, of course, and usually we have two tests of 20 ends each in the loom at the same time. You see, JIM, the ends of yarn rotate or travel from the whip roll, through the drop wires, through the harnesses and reed and back to the whip roll; in other words, each end travels around and around until it is worn out and breaks. Then the number of picks is recorded showing how many picks it took to wear that end of yarn out, and so on, until all of the ends are worn out. The pick counter is geared to register ten picks instead of a thousand. You can readily see that by making a large number of tests you will have comparative tests on each sizing or other material you wish to test, and these tests will be comparatively correct. This is the nearest thing to actual weaving we have seen so far and one man can make more tests in one day than you could make in months in the usual way.

Quite interesting, OLD-TIMER. *How about my making a sketch to show how those ends run through the loom?*

Sure, JIM, and I have some small snapshots out at the office which show the yarn in the loom and I will give you a set of them.

Now, a few more things I did not tell you. Can't think of everything during a conversation, you know, but you keep asking questions and I will do my best to answer them until you thoroughly understand all of the details.

To get tension on each end of yarn and to be sure the tension is the same on all ends, we use those small canvas bags with common bird shot in them. A canvas bag is about the size of a man's thumb in diameter and about 3 inches long. We first determine the breaking strength of single strands of the yarn to be tested by breaking about 50 strands on a Suter machine. Then we fill the canvas bags with bird shot sufficient to represent 25 per cent of the breaking strength of the raw yarn. For example, if the yarn breaks on an average of 12 ounces, we put 3 ounces of shot in the canvas bag; that is, the bag and shot



A general view of the loom used for testing single ends of yarn and described in this article by "Old-Timer" . . . . . .

should equal about 3 ounces.

This 25 per cent of the weight of the average breaking strength of raw yarn was arrived at simply by testing and experimenting with several different weights, but we realized we should have some definite standard for all tests, and as the 25 per cent seemed to give a fairly good tension on yarns from 30s to 20s, we arbitrarily set up this standard. You may find some other percentage of the breaking weight of the single strand raw yarns suits you better. Our tests have been mostly with 30s yarn and therefore we do not know how this weight would fit with finer or coarser yarns.

One other thing, JIM. We found in making our tests that the ends would oftentimes break at the knot. You see, each end starts at the whip roll and then goes through the drop wire (or hook holding the canvas bag with bird shot added to make the weight represent 25 per cent of the breaking strength of single strand yarn), next through the back harness eye, through the reed, around the take-up roll (sand roll) and back through the reed, front harness, drop wire, and to the whip roll where the *two ends of one thread* are tied together, thus making a continuous thread. Inasmuch as we are testing yarn for its abrasive or weaving qualities, we are not interested in the yarn breaking at the knot, so when the knots all come up to the back of the harness, we stop the loom and rotate the take-up roll by hand until the knots are through the reed. Then we start the loom and run it until the knots come around again.

Why don't you run the shuttle in the loom, OLD-TIMER?

We do, JIM. I don't see the shuttle here at the loom now, but as I explained to you before, we have not had occasion to use the loom in several weeks and I suppose they have put the shuttle away to prevent its being used by some of these fixers who want to show a good supply account.

And another question I know you are getting ready to ask is: why don't we put all the steel harness eyes on each harness shaft in order to give the yarn the same side wear it gets in actual weaving by the crowding of the harness eyes? Well, we did just that, JIM, but did not get any appreciable difference in our tests, and then, too, we realized that tests made in this loom are only *comparative* and as long as all tests are handled in the same way the comparison is correct.

Where did you get this sheet rubber to cover the take-up roll with, OLD-TIMER?

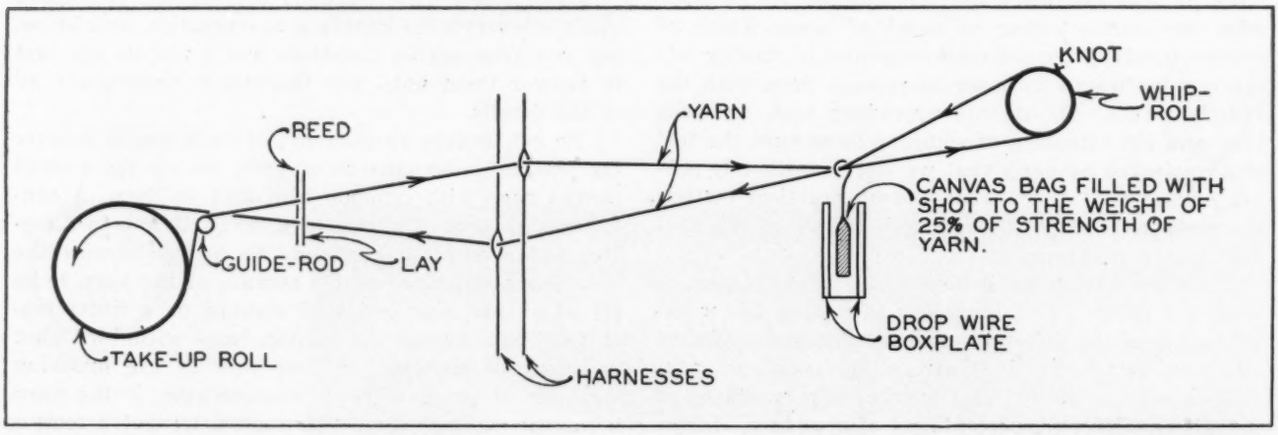
That is an old inner tube out of an automobile tire, JIM. The take-up roll would roughen up the yarn and especially with rayon, it would sometimes hang and break so we cut this automobile tire into 2-inch strips and covered the take-up roll. This rubber covering of the take-up roll also practically eliminated the slipping of the yarn which gave us some trouble on the first tests we made.

We also covered the cloth roll with several layers of cloth and pressed it tightly against the take-up roll by putting all the spring tension we could on the cloth roll racks. It was necessary to do this to prevent 100 per cent rayon yarns from slipping on the take-up roll.

Of course, JIM, the ideal location for such a loom would be in a laboratory where you could subject the yarns to all kinds of humidity and temperature conditions, but as we did not have room in our laboratory we put it here in the weave room where it gets the same atmospheric conditions as our weaving.

We do have arrangements where we can run the

(*Continued on page* 112)



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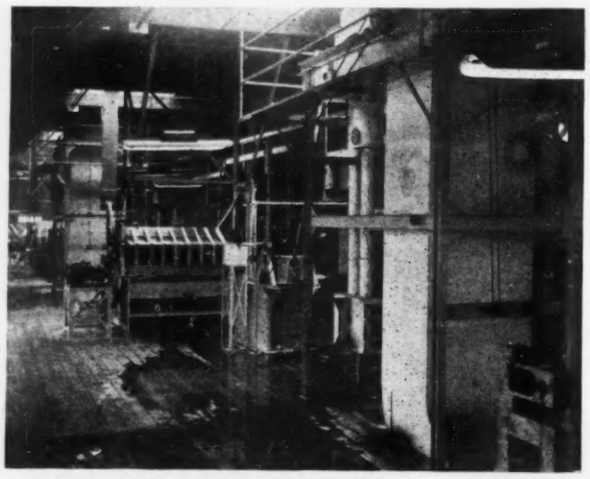

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HOW OTHER MEN MANAGE

Controlling Sizings

EDITOR COTTON:

Answering the question of "CONTRIBUTOR No. 7378" on page 124 of the July issue of COTTON, concerning his question on keeping correct weights in the card room, I believe it is necessary to review my own situation and through this method some information might be given that he and other readers can use.

First let me say that trying to keep correct weights is a problem that bothers most carders because of the conditions that might cause variation. I refer to changes in stock being processed, changes in relative humidity; and the human element to a great extent if not correctly trained might unknowingly do things that throw weights off standard. With the increasing turnover in help this latter reason is making it more difficult than ever to keep numbers right.

Starting back in the opening room I believe it is necessary to get as large a laydown of bales of cotton as it is possible to put down. In our particular case, to make this possible, we decided to open our bales on the floor above our feeders. We feed through chutes to the blending feeder hoppers. On each side of these chutes we lay down 30 bales. We have 5 feeders to a unit and the feeders feed into a lattice apron which in turn feeds into a bale breaker and from there it goes through the rest of the opening equipment and then to the pickers.

Our policy is to feed from 30 bales, these bales being set in so that when we start to feed from either side of the chute, 15 bales are at half-full size when the other 15 bales are full size. We believe that by this method we are regulating as well as we can the feeding of the cotton to the blenders. The density of the bales is less at the top of a new bale than it is half-way down and we believe that by feeding as we do we eliminate difficulties in maintaining the flow of cotton to the picker. By the time the full 15 bales are down to one-half full size the other 15 bales are all gone. This permits us to go to the other side of the chute to feed where the bales laid down have been opened from five to seven hours previously. This airing of bales plus the blending possibilities is very helpful in maintaining a uniform flow of cotton to the pickers.

Our reworkable waste which we re-use is fed into the hoppers in the opening room and goes into the main pipe line where the regular stock leaves the opening room. An accurate check is kept of the amount of reworkable waste made each week. We feed this waste in at a definite percentage to use up all our waste. I refer not to lap waste but to drawing, roving, card sliver and spinning scavenger waste which we machine on a waste machine before using. Our particular products permit us to re-use this waste satisfactorily. This reworkable waste must be fed uniformly if used. In other words, the same amount must be fed at all times or the weights of laps will vary in the picker room. It also has a definite bearing on the way the work will run in the spinning department.

In the picker room we have all one-process picking. The cotton is fed into each picker hopper from an automatic distributor. It is our practice to have the switches that control the feed into each hopper set so that we have small and frequent feedings into each hopper. The hoppers are kept at a level of about three-quarters full. We feel that this is important. Some men allow the feeder hoppers to run down to a low level before they call for cotton. The pressure on the feed apron is affected by such a method and consequently cotton isn't taken up by the apron in as large a quantity when the cotton in the hopper is at a low level as it is when it is full. Maintaining as near as possible a uniform level helps keep laps on standard.

Of course there are many other things that may cause laps to vary in weight. There are many mechanical conditions that need not be mentioned. Then, too, the picker tender can be at fault in the manner he doffs and starts the picker. We all realize that there is a draft of approximately 1.06 between the bottom press roll and the 9-inch lap roll. At the start of a lap the draft is not put into effect until the calender racks are run down into position. If the picker tender is slow in getting the racks down into position he will increase the yardage affected by this condition. As a result, the lap is always heavy at the start and it doesn't help the condition if more than is necessary is allowed to run before the draft is applied. We all know, too, that pickers should be doffed at the moment that the picker knocks off. The laps usually run light at the last yard made and I can attribute this to nothing other than stretch. The lap is built at great pressure and when this pressure is released the outer yard not being held had a tendency to expand and stretch. The friction motion should be checked regularly to see that it is not binding, which naturally causes uneven weight per yard.

WE INVITE our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing.

◆

A previous discussion of this subject appeared on page 107 of the August issue of COTTON.

We use vertical filter boxes to take care of our exhaust from our picker fans. We have no dust cellar. It is important, if one uses this method of taking care of his exhaust of air, that they be cleaned regularly. We clean them once every 8 hours. If not cleaned when they should be the dust will form so heavy on the screens that it will cause a resistance to the air that should be filtered which in turn will cause back pressure and consequently uneven laps.

For several years we used a lap indicator in our picker room. It was calibrated at 6 per cent regain and our standard lap weight was whatever weight the indicator pointed to on the chart of the indicator. We found that the element in this instrument was very sensitive and almost immediately any changes in humidity were reflected in the standard weight readings on the chart. Still we found plenty of variation that made us wonder whether the instrument was to be relied on or not. For example: a large door would be opened by a truckman at certain periods to pick up shipments going out. It would take some time to load his truck. The chart reading would change and the man weighing laps would follow the new standard. This usually meant several standard weight laps during the period of 24 hours. Many men rely on this instrument entirely believing that any change in the moisture content of the air is immediately reflected in the cotton in the lap being made and that no further checking is needed. We felt after long observation that, although the element in the instrument was very sensitive and gave a fairly accurate idea of gains or losses in moisture in the air as shown by the chart reading, that cotton didn't always react the same in the process of picking while the lap was being made. It was our experience that when we raised our standard weight of lap to follow the instrument that while theoretically we were increasing the weight to take care of extra moisture that in practice it didn't work out. The extra weight usually was cotton. And vice versa: when the standard weight dropped on the instrument and we followed it on the picker we actually put less cotton into the lap. Theoretically, any changes in moisture content in the air would act on the cotton in a similar way that it did on the element in the instrument. In very slow gradual changes it may, but where quick big changes occur we felt it wouldn't. So in order to help our condition we decided to put in a recorder beside the lap weight indicator. The graph made on this recorder gave us an accurate idea of the humidity conditions in the room for a whole week. We realized then that many of the fluctuations in lap weights were due to our lack of care of conditions that caused humidity changes. With careful checking of the humidifier heads and controls plus a keener watchfulness of anything that affected humidity by the second hands and picker men we were able to maintain 45 to 50 per cent relative humidity in the room. We found our standards hardly ever varied. Any changes made were very slight. The allowance or tolerance is one-half pound either side of standard and we weigh four laps per hour from each picker.

After leaving the picker and going to the card we allow the card tender to tear off the last yard of lap (the yard next to the lap rod). This is heavy and, too, it is many times the cause of bad jams on the cylinders as it is sometimes wrinkled and doubled. If this is so, it might raise the feed roll on one end and be pulled in quickly, causing a jam.

Trumpets should be checked periodically as too large a hole in the trumpet will allow heavy work to go through which should break down at the trumpet.

On combed stock the sliver and ribbon lappers should be kept in good condition. The operators must be careful and realize the importance of good work. The same applies to the combers and the operators of combers.

We control our weights on drawing frames. That is, it has been our experience that we get the best results by correcting at the drawing frames. We try to maintain standard weights per yard. We size four times in 24 hours. Tolerance of ½-grain each side of standard is permitted. Six tenths of a grain light or heavy is cause for a one tooth change in the crown gear. Our crown gears run in size from 98 teeth to 102 teeth so that one tooth change is a comparatively small change. Occasionally we have to change two teeth on the crown gears and very rarely one tooth in the draft gear instead of a crown gear change. The draft gears range around 40 teeth and one tooth draft gear change has a value of about 2½ per cent increase or decrease in weight. With the crown gear change we get a relatively smaller change in weight and we believe a better control to enable us to keep on standard. All these changes are made on the finisher drawing frames. We keep the same crown and draft gears on the breaker drawing frames at all times but weigh the breaker drawing sliver twice a week to check and see how the work is coming through on each frame.

Special attention should be given to drawing tenders creeling. Drawing tenders should be carefully instructed on placing new ends in when creeling as well as the proper making of splices. Creeling drawing frames may be done in various ways and it is a matter of opinion as to which is best. We believe that three full cans should be creeled with three cans half-full to get the best results.

We rarely ever change gears on roving frames to keep our weights and, too, we have found our changes necessary in spinning are very few and far between. Previous to adopting our system of changing at the drawing frames we found that we changed frequently on roving frames and also in the spinning department.

An interesting experiment was tried by us at one time. It was done to enable us to cut down to a minimum the changes made at the drawing frame. We tried, with the aid of a lap weight indicator converted for use on drawing, to determine when there was more or less weight in the drawing sliver whether it was due to too much or too little moisture in the air. The instrument was set so that with 6 per cent regain the pointer on the chart would be at

AT

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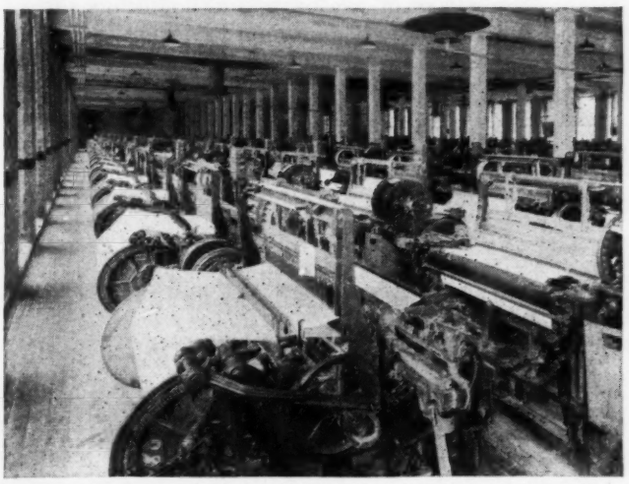

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60 grains, our standard. Any deviation from this reading indicated an increase or decrease in the amount of moisture in the air. The reading on the chart was the standard weight used and any changing of gears was done from that reading.

The results were not too bad. It pointed out to us that there was need of further study and research along these lines. But to definitely rely on such a method we feel is not to be done. One particular experience made us cautious of adopting such a procedure. A day when the humidity rose very high, it sent the reading on the chart to 62 grains. The drawing theoretically should follow this trend as we knew definitely that there was an excessive amount of moisture in the air. The drawing didn't and although it got some heavier, gear changes were required to bring the drawing up to standard as indicated on the instrument chart. We followed this drawing through the succeeding processes feeling that if there was excess moisture in the sliver that this moisture would be lost and the amount of cotton remaining would be at standard size or weight. This didn't work out as the work remained heavy, indicating that the drawing sliver had actually contained too much cotton rather than an excessive amount of moisture. Apparently the same thing happened again that we experienced in the picker: the element in the instrument reacted quicker than we found to be the case of the cotton in process. We wondered whether the sliver at the bottom of the drawing cans got the chance to be affected by the change in humidity that the drawing in the top part of the cans did.

One thing the experiment did teach us was that further research should be carried on in this matter of drawing sizings and its connection with weight control; the part that humidity plays in its variation and the importance of accurate checking of humidity conditions at all times. Most mills are old and were built when very little attention was given to humidity. It might be possible, with better instruments and controls, to do a lot better than we are doing but until such time the matter of regular sizings of drawing and changing of gears to keep at the standard weight has been our most satisfactory method.

We find that the drawing sizer, when instructed properly, will take a great interest in her work. She must be made to realize the importance of what she is doing and always to be on the alert to question anything that doesn't seem right. She records the sizings on a form made for this purpose and on any change involving a draft gear change she rechecks it and makes a note of it before writing out her slip for the grinder to change the gear.

Our card grinders change the gears on our drawing frames. They are given a slip of paper by the sizer which shows the number of the frame to be changed. It also gives the actual sizing and the number of teeth to be increased or decreased on either the crown or draft gear. She signs her name to the slip and when the grinder changes the gear he writes on the slip the gear he took off and the gear he put on. This paper is forwarded to the overseer's office at the end of each shift together with the sizer's report of the sizings. These are checked by the overseer and any errors that he might note are immediately brought to the attention of the party concerned.

With regard to "CONTRIBUTOR NO. 7378's" layout for 36s combed yarn, I believe it is very fine. We in the carding end of the business have really a great problem to keep up our quality in every respect. With the elimination of processes and doublings the problem of maintaining a minimum variation in sizings requires plenty of thought and supervision. We will meet these requirements and by a free exchange of ideas realize the benefits of the progress made in the preparatory processes during the last decade.

CONTRIBUTOR NO. 7383

Jumping Front Rolls on Drawing Frames

EDITOR COTTON:

In his question on page 102 of the January issue of COTTON, your "CONTRIBUTOR NO. 7315" states that the front rolls on his drawing frames are jumping. The rolls are covered with cork, run 400 r.p.m. and are weighted 36 pounds. He finds that by changing the front roll with one on the second line or third line it stops the jumping temporarily.

This question takes me back quite a few years. At that time I was overseer of carding of one mill in a plant that consisted of three mills. In that year I was promoted to the larger mill and to my surprise found the finished drawing sliver weighing 75 grains per yard, and the front roll running at 275 r.p.m.

On the first Saturday afternoon after taking the position, I had the drive changed to give a front roll speed of 400 r.p.m. and changed the weight of the sliver to 48 grains per yard.

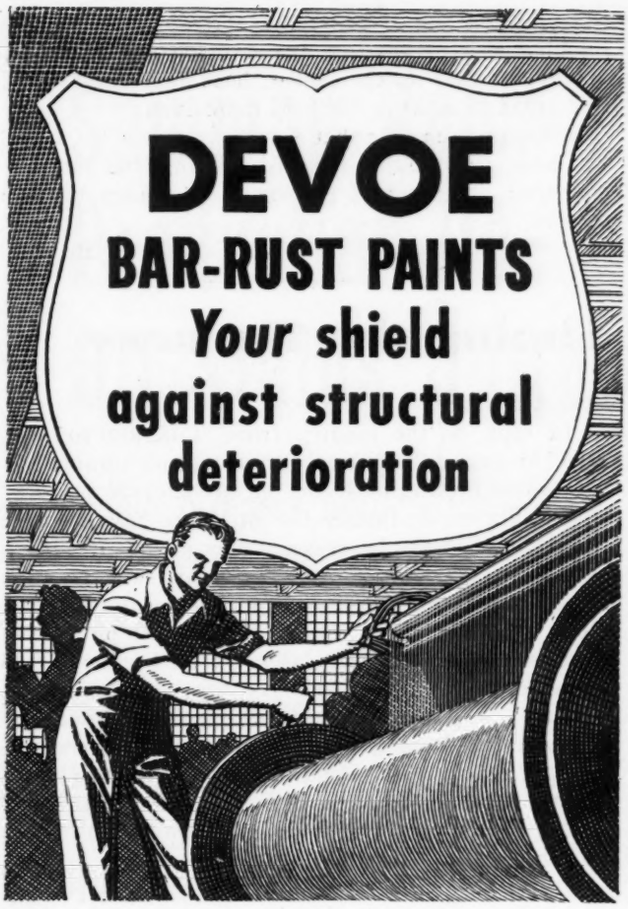
Like "CONTRIBUTOR NO. 7315" I was in real trouble because we could not afford to change the drive, which meant a loss of production. The front rolls were jumping on most deliveries so the only thing I could do at the moment was to borrow enough top rolls from the other mill to get things started.

I would like to have "CONTRIBUTOR NO. 7315" notice here that the rolls borrowed from the other mill were covered by a different roll coverer.

After getting all the drawing frames running, I started to experiment on one head with the rolls I had taken out due to their jumping. Next, I obtained card banding and hung each weight a little lower than those hooked on the stirrup. This stopped the jumping, but of course, I knew that the rolls were defective.

I held two of these defective rolls at the window, holding the bosses together and I could see that the surface of the rolls was uneven; so I cut the cork from six rolls and had the roll coverer from the other mill cover the six rolls, and not one of them jumped. From this I knew that the trouble was in the roll covering.

Consider the statement of "CONTRIBUTOR NO. 7315" regarding changing the front roll with one on the sec-



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ond or third line of rolls and the stopping of the jumping, this proves that the covering was defective, but by running on the slower, back rolls for a time, this aided in making the boss more even.

However, I am sure that if "CONTRIBUTOR No. 7315" will hang the weights on card banding, the jumping will stop, but the best remedy is to change the roll coverer.

WASH (R. I.)

Timing the Harness

EDITOR COTTON:

In reply to the inquiry from "CONTRIBUTOR NO. 7349" on page 143 of April COTTON, about timing harnesses and picking on looms, on probably 95 per cent of all plain woven fabrics the harnesses have medium timing, that is, the harnesses are even when the crank of the crankshaft is approximately half-way between bottom and front center, or when the reed is between 2 and 2½ inches from the fell of the cloth on its forward stroke. In certain cases where good cover is paramount, or in cases of very heavy pickage, it is advisable to time the harnesses earlier or so that they are even at bottom center. Unless absolutely necssary, this early timing should not be standardized as it will greatly inconvenience the weaver, due to the small space between the harness and the reed in drawing in broken ends.

In other cases of light cotton and rayon fabrics or where frequent selvage breaks are encountered, it is advisable to time the harnesses late or so that they are even on front center or a little before.

These timings apply only when the harnesses are operated by cams or head motions which have a dwell long enough to permit free passage of the shuttle through the shed. With dobby and Jacquard harness motions these timings are not always practical due to the lack of dwell of these harness motions. The variation of timing with dobby and Jacquard is very limited and the best all-around result seems to be when the harnesses are timed so that the dobby or Jacquard cranks are vertical when the loom is approximately half-way between top and back center.

As a rule, there is no relation between the timing of the harness motion and that of the picking motion. The picking motion is so timed that the shuttle is driven across the loom in time to raise the dagger over the frog steels with the least possible force on the pick. This has been found in practice to be such that the picker will just start to move the shuttle for the pick when the loom reaches top center or a little past. Most of the looms are timed with the pick at top center, but if there is a heavy beating back of the fell of the cloth it may be advisable to time the pick up to 15 degrees beyond top center.

On the X family high-speed looms, Draper Corporation recommends the following timing of the pick:

X- and XL-Model: Time pick so that the shuttle starts to move when the reed is 2⅛ inches from the fell of the cloth.

Previous discussions on this subject appeared on page 109 of the May issue of COTTON.—THE EDITOR.

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XK and XD looms should be timed to pick with the reed 2⅜ inches from the fell of the cloth if the speed of the loom does not exceed 180 p.p.m., and 2⅛ inches for higher loom speed. A slight deviation from this timing may be advisable under certain conditions.

The inquirer is quite right when he states that, "There is one best place and way to make these settings and any variation from that point either way is just that much off." Unfortunately, however, people have different ideas on what that one best place and way are. They depend upon the speed and width of the loom, the width of the fabric, the type of fabric, the fixing practice, the condition of the loom, the amount of humidity, and a multitude of other factors. Therefore, to get the absolutely best results, not just merely making a loom run, it is necessary for any mill to have one of their A-1 loom fixers experiment with various settings on one loom, and when he has found the best possible setting, adopt this as the standard. An absolute uniform setting for looms could only be had if the whole loom were a machine of precision work, which it is not, and were kept in perfect mechanical condition, not merely in running condition. All parts would also have to be of a standard make and material. These the mills do not have and it is therefore possible for some mills to have higher production and less seconds on identical looms and fabrics. This is where a mill with superb management, skilled loom fixers, superior materials and extensive experiment in research can surpass other mills of the same class.

IVAR MOBERG

An Old-Timer Says— A Special Yarn-Testing Loom

(*Continued from page* 102)

loom from 140 to 200 picks, but we cannot make tests with any other weaving conditions. For example, if we want to test cut rayon or filament rayon warp yarns we can test them only with our regular cotton warp atmospheric conditions which we are using here in our weave room, and, as you know, rayon does not require the humidity that cotton does, or does it?

Darned if I know, OLD-TIMER, *because I have not had enough experience with weaving rayons or other synthetic fibers to find out about it. However, from all of the information I have been able to get, my impression is that both rayon and cotton are highly hygroscopic and therefore absorb moisture readily. This fact makes the slashing of the two fibers similar in many respects, with the exception that when you stretch cotton yarn, even when it is subjected to excessive moisture, it will recover a large percentage of that stretch when the tension is relieved. But subject rayon to stretch, and it stays stretched. Now, if that reasoning is correct,* OLD-TIMER, *should rayon yarns be slashed with the least possible amount of stretch?*

Now, JIM, let's not get into deep water. We will find ourselves arguing such questions all day and getting nowhere. However, just for your information, I will say that one successful overseer of weaving told me he intentionally gave his rayon warps more stretch than he gave his cotton warps and found he had less start-up marks in his cloth.

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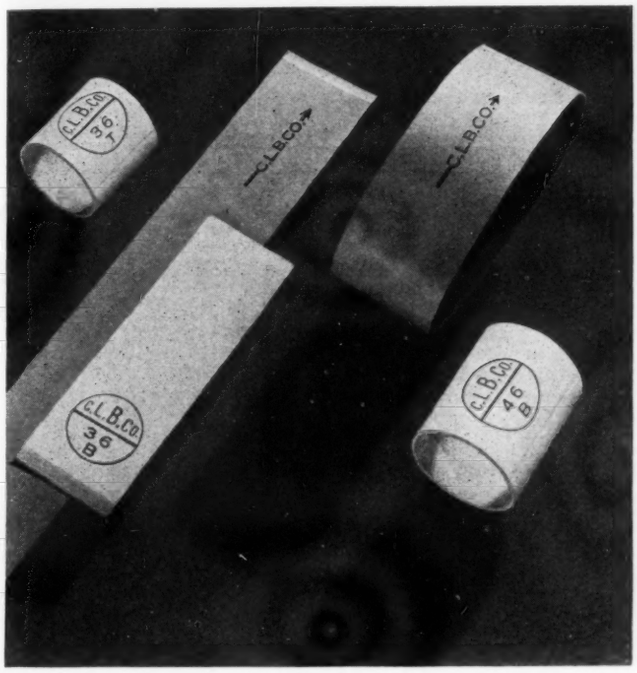

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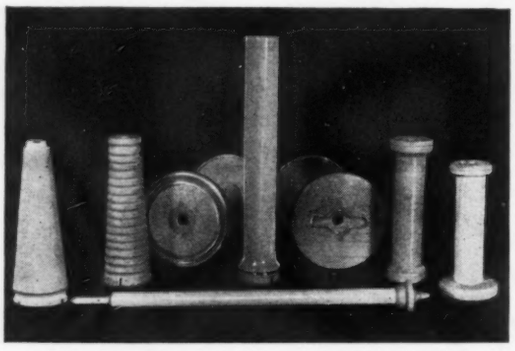

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Continued from Page 115

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KNITTING . . .

801. THE WILDMAN SINGLE-HEAD FULL-FASHIONED HOSIERY MACHINE—Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

803. THE TUBE-TEX FOR TUBULAR KNIT GOODS—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste.—H. W. BUTTERWORTH & SONS CO., York and Cedar Sts., Philadelphia, Pa.

804. FULL-FASHIONED HOSIERY MANUFACTURE—Illustrated folder giving the history of full-fashioned knitting and describing in detail the different processes in present day manufacturing and the application of Gulf lubricants to the various machinery.—GULF OIL CORPORATION, Pittsburgh, Pennsylvania.

805. ELASTIC ATTACHING MACHINE — Form 885 on new three needle machine for attaching flat elastic with perfect stretch tension device and other features.—WILLCOX & GIBBS SEWING MACHINE CO., New York City.

806. DEPENDABLE FINISHING FOR MODERN ELASTIC TOP HOSIERY—Describing and illustrating equipment for basting and attaching insert elastic, attaching wide or welt elastic and seaming elastic in women's hosiery.—UNION SPECIAL MACHINE COMPANY, Chicago, Ill.

807. CIRCULAR KNITTING MACHINES—A fifty-two page illustrated booklet containing valuable information on the manufacture of transfer top hosiery. Includes illustrations of rib knitting principles, yarn changers, selvage welt, loose course and methods of laying in Lastex.—FIDELITY MACHINE COMPANY, Philadelphia, Pa.

809. TEXACO IN THE KNITTING INDUSTRY—Folder on knitting mill lubrication.—THE TEXAS CO., New York, N. Y.

SEWING MACHINES . . .

901. LOCKSTITCH MACHINE WITH AUTOMATIC LUBRICATION—Bulletin illustrating new unit for single needle stitching on wide variety of articles. Form 886.—WILLCOX & GIBBS SEWING MACHINE CO., 214 West 39th St., New York City.

902. SEWING MACHINES — Illustrated technical booklets on high speed lock-stitch sewing machines for all types of work.—SINGER SEWING MACHINE CO., New York City.

MATERIALS HANDLING . . .

1001. HOW TO DETERMINE WHERE OVERHEAD MATERIALS HANDLING EQUIPMENT CAN BE USED PROFITABLY—Illustrated folder including elements of materials handling system, preparation of simple layout.—CLEVELAND TRAMRAIL DIVISION, Wickliffe, O.

1002. CATALOG NO. 22—An attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. —MEESE, INC., Madison, Ind.

1003. CASTERS AND WHEELS—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this.—DARNELL CORP., LTD., Long Beach, Calif.

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MISCELLANEOUS . . .

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1103. UNBRAKO SCREWS — Illustrated 16-page booklet No. 570 gives data on Unbrako hollow set screws, with knurled point, self-locking features. Includes miscellaneous screw and locking nut data.—STANDARD PRESSED STEEL CO., Jenkintown, Pa.

COTTON, Grant Bldg., Atlanta, Ga.

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IS IT EVER "TOO EARLY" TO THINK ABOUT THE FUTURE OF YOUR MILL?

It is not too early, even now, to be thinking about the influence of wartime hosiery trends on the future of your knitting mill. For war greatly accelerates change — in the technique of production and merchandising . . . in the attitude of the buying public.

Alert mill management, looking ahead, is keeping an eye on these and other changes for their effect on the hosiery business after the war. For of one thing you may be sure—the industry will *not* return to the place where it left off before the war began. Many of today's trends will carry over into the post-war world . . . to attract a more discriminating public in a buyer's market.

New constructions, styling and merchandising have acquainted consumers with the advantages of different yarns, and the variety of distinctive styles they permit. While in process of development are new, improved yarns with a promising future . . . yarns which in turn will inspire still newer styles, and be widely publicized to a more hosiery-conscious public.

This is why far-sighted management is redirecting its peacetime planning these days. Among the factors that are being seriously considered is the type of knitting equipment that will enable a mill to anticipate the new consumer demands after Victory. You have probably been thinking a good deal about this in terms of your mill's position. We, too, have been giving a lot of thought to hosiery mills' post-war problems. You may be interested in some of our views on the subject. Like to talk them over? Just drop us a line and we'll be glad to call at your convenience.

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point offices.

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SCOTT & WILLIAMS

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KNITTING SECTION

Automatic Gravity Conveyor at Hanes Hosiery Mills Co.

By C. L. Peterson

AN UNUSUAL overhead materials handling system is the tramrail automatic gravity system in operation at the Hanes Hosiery Mills Company, Winston-Salem, N. C., producers of nylon, rayon and other ladies' hosiery, for the purpose of providing a means of storing and handling empty hosiery trucks. The system, which includes more than 200 tramrail carriers, is entirely automatic in operation. Despite the fact that the carriers travel more than a third of a mile in making a complete cycle, they have no power drives and depend entirely upon gravity to carry them forward.

With the system, very worthwhile economies have been effected. Far less handling is necessary, and the large floor area normally used for storing the trucks is no longer required because space overhead is utilized for this purpose. If it were not for the tramrail system, a new building addition would have been necessary. The elevator on which the trucks formerly were taken from the first to the third floor has been relieved of work that formerly taxed its capacity. An additional elevator would have been necessary to take care of additional trucks required because of greatly increased output. The system introduced an efficient means of handling the trucks, expedited their delivery, and greatly cut the costs of this work.

The trucks handled by the system are those in which the hosiery machine operators deposit the hose as it comes from the knitting machines, which are located on the third floor of the building. When the trucks have received their quota of hose, they are hand-pushed on their castors from department to department on the third floor, and on the floors below where various finishing operations are performed on them. The trucks are taken by elevator to the second and first floors. When the trucks have reached the first floor the hose are removed and put into stock. The empty trucks must then be returned to the third floor and be on hand ready for another cycle. It is at this point that the tramrail system comes into use.

The empties are pushed into tramrail carriers, as shown in the photograph in Fig. 1, and are elevated directly to the third floor. Each carrier handles two trucks at a time.

The overhead tramrail lay-out on the third floor is shown in the sketch, Fig. 2. It will be noted that there are four parallel lines of overhead track running nearly the length of the room. Tramrail carriers loaded with empty trucks travel from the lift section, *D*, to which they were elevated from the

Fig. 1. Loading station on the first floor. Two empty hosiery trucks are elevated to the third floor on each trip. Note pushbutton station on the wall

first floor, down Track 4, and return on Track 1. They are unloaded at *A*, and then travel empty through switches *B* and *C*, down Track 3, and return on Track 2 for storage, finally coming back to *D* after having traveled over all the trackage. At *D* they are lowered to the first floor, loaded, and the cycle repeated.

Tracks 1, 2, 3, and 4 are located close to the third floor ceiling in the middle of the room over the hosiery knitting machines, as will be seen in Fig. 3. The tracks thus provide storage space for a great many trucks that can be brought down and onto the floor easily as needed. There is only one loading station, and that is on the first floor, as shown in Fig. 1, which is directly below point *D* in the sketch. There is only one unloading station—that is, only one place at which the empty trucks are removed from the carrier for use on the third floor, and that is at point *A* in the sketch.

All carriers travel by gravity down inclined tracks and have no motor drives. The tracks have a grade of ⅛-inch per foot. When the carriers reach the bottom of an inclined track, a lift section raises them one at a time approximately 7 feet to the top of another inclined track, as shown in the side view sketch in Fig. 4. Four of these lift sections with electric motors for their operation are used to provide this unique means of power. They are located at points *G*, *H*, *N*, and *O*, as shown in the sketch in Fig. 2.

Only two men are required for operating the entire system, one at the loading station and another at the unloading station, and these men need spend only a part of their working time at loading and unloading trucks.

The following description of how the system operates will be understood by reference to the illustrations. A carrier loaded with two empty trucks comes up the lift section from the first floor at point *D*, Fig. 2. As the section approaches the high level, it actuates an electrical switch tripper that causes an empty carrier at point *F* to be released. While this empty carrier travels by gravity through track switches *B* and *C*, and finally onto the lift section *D* to be returned to the first floor, the loaded carrier that has just arrived from the first floor runs off the lift section *D* and starts by gravity on its way to lift section *H*.

At *H* the loaded carrier is elevated (see Fig. 4), and travels by gravity on Track 4 toward "walking beam" *R*. The walking beam will be described later. Lift sections *H* and *G* remain in the lowered position when not in operation. As lift section *H* goes up, it actuates an electrical contactor that causes section *D* to lower with an empty carrier to the first floor.

The loaded carrier on Track 4 finally reaches point *J* where it is stopped by other carriers ahead of it. One by one each carrier is automatically passed through walking beam *R* and allowed to travel to lift section *N* on Track 1. At *N* the carriers are again elevated 7 feet and permitted to travel by gravity to point *K* where they are stopped by a group of carriers ahead.

The carriers are not released at walking beam E, on Track 1, until called for by the man who unloads them at *A*. He does this by pressing a wall push-button located near point A.

A loaded carrier is then released at *E* and travels onto the lift section *A*. It remains there until the man pushes a button which causes the section to go down and onto the floor. The section will lower only as long as the "Lower" button is kept depressed; a safety feature that prevents the possibility of anyone walking below and being injured.

The trucks are then removed from the carrier, and the empty carrier is elevated by depressing a push-button. When the section reaches the rail level and is rigidly in position, the empty carrier rolls on through switches *B* and *C* to lift section *G* on Track 3. Again it is raised and allowed to roll down Track 3 to walking beam *P* or to the end of a group of carriers before *P*.

At *P* the empty carriers are released one at a time and permitted to roll around to *O* on Track 2, where they are elevated and started on their way to point *F*. The same type of equipment and principles of operation are utilized as for the loaded carriers traveling from Track 4 to Track 1.

Both loaded and empty carriers on Tracks 4 and 3 pass through their respective walking beams and travel down Tracks 1 and 2 automatically, and keep doing so until all carriers are cleared off of Tracks 4 and 3, or until Tracks 1 and 2 are completely filled, at which time the walking beams refuse passage of any more carriers.

All switches and walking beams are air-operated, but are controlled electrically. The lift sections, as stated, are motor-driven.

When the lift section *D* is in the high position, the switches *B* and *C* automatically take a position so that a carrier released at *F* on Track 2 can readily roll through to *D*. However, when lift section *D* is lowered, the position of the switches changes so that empty carriers from *A* travel through to *G* on Track 3; also, should a carrier somehow be accidentally released at *F*, while lift section *D* is lowered, it will be stopped by switch *B* and prevented from traveling through and falling down the shaft at *D*. The switches snap back and forth from one to the other position each time lift section *D* comes up or goes down.

The "walking beams" used in the system are ingenious but simple devices that allow only one carrier to pass through at a time. The sketch in Fig. 5 indicates how they operate, and the photograph in Fig. 6 shows walking beams *P* and *R*.

In order for a carrier to pass through a walking beam, it has to travel through two stops, *X* and *Y*, on the beam. Carrier *A*, in Fig. 5, has already passed Stop *Y* and is being held by Stop *X*. When the beam snaps into Position 1, Carrier *A* will be free to travel on. It will be noted that when the beam assumes Position 1, Stop *Y* goes to a point where it prevents Carrier *B* from continuing. When the beam is snapped to Position 2, Carrier *B* will be permitted to travel approximately the length of a carrier to the location occupied by Carrier *A*.

The walking beam is snapped to one position or the other by an air cylinder which is controlled electrically and responds to contactors operated by movements of other parts of the tramrail system.

The push-button at the first floor

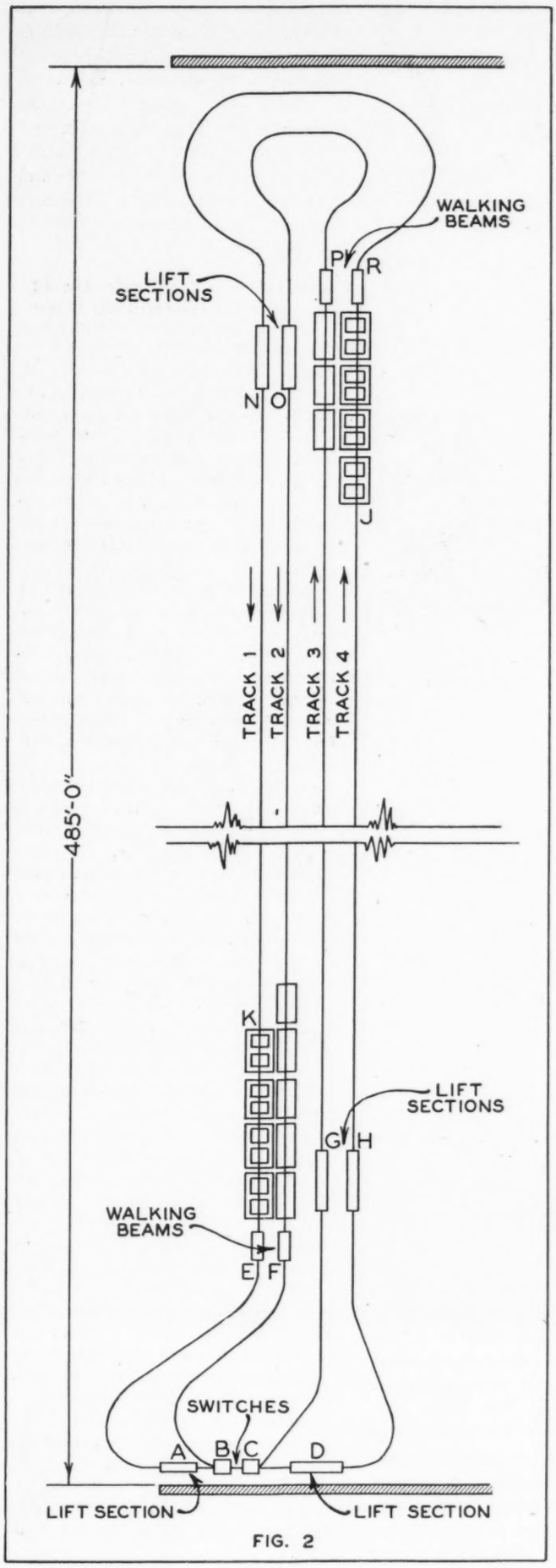


FIG. 2

Fig. 2. Showing the general layout of the tramrail automatic gravity system at the Hanes Hosiery Mills Company . . . . . .

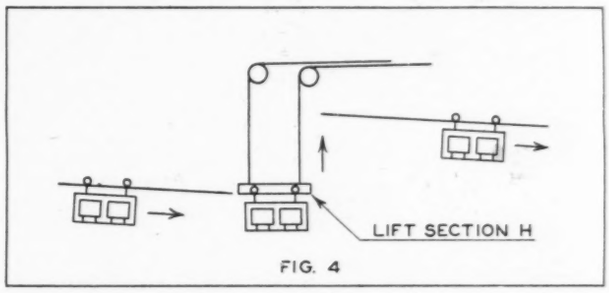


FIG. 4

Fig. 4. A side view, showing the "lift section" that provides means of raising the carriers from the end of one inclined track to the top of another, so that only gravity is used as a means of moving the carriers forward . . . . . .

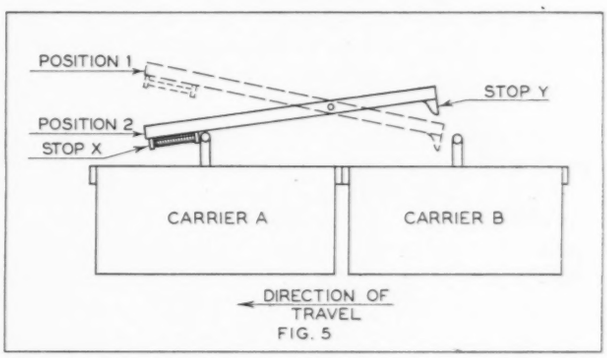


FIG. 5

Fig. 5. Illustrating the principle of operation of a "walking beam" . . . . . .

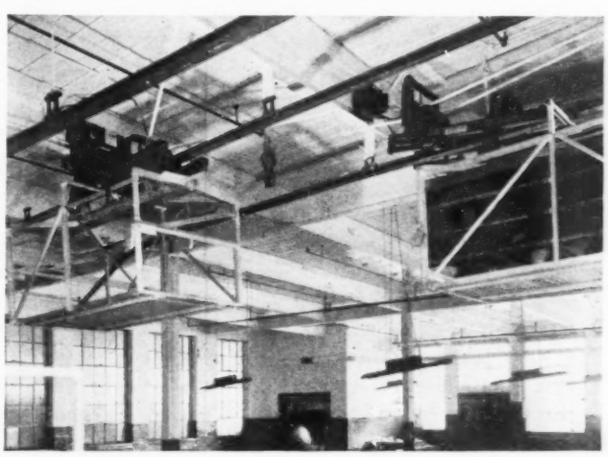


Fig. 6. The "walking beams" which permit only one carrier to pass through at a time. Walking beam "P" shown at left, "R" at right . . . . . .

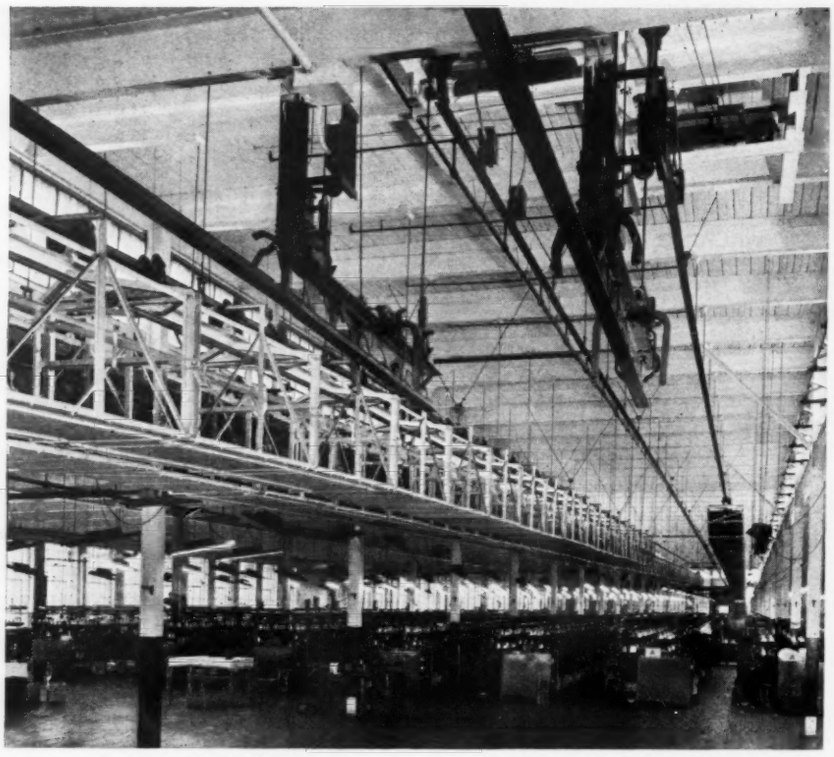


Fig. 3. A view of the four lines of tramrail track over the hosiery knitting machines on the third floor. In foreground are lift sections "G" (left) and "H" (right) . . . . . .

loading station is similar to the one at the third floor unloading station. It has only two buttons, however; one is a "Raise" button and the other an "Inch Lower" button. A "Lower" button is not needed since the normal position of the lift section is on the first floor, and it comes down automatically as soon as a loaded carrier has been discharged and an empty one run onto the section *D*.

There are a great many safety features in the system. After the trucks have been removed from a carrier on the thidd floor at *A*, the operator presses the "Raise" button which raises the lift section and starts the empty carrier on its way to section *G*. However, this is so arranged that unless section *G* is in the down position ready to receive the carrier, lift section *A* cannot be elevated, so the possibility of the carrier running off an open rail at *G* is removed.

There is another safety feature at this point making it doubly certain that a carrier will not run through an open rail end. Two safety forks are provided at *G*, one which stops the carriers at the wheels, the other which stops them at the cross bars on top. These forks open and close mechanically by the movement of the drop section. Similarly safety forks on the lift sections prevent a carrier from rolling off until the section is locked firmly in place.

Another safety feature is the electrical arrangement that prevents lift section *D* from being elevated until the rail between *D* and *H* is clear of any carriers. Likewise, throughout the entire system at each point wherever open rail ends will occur, there is provided at least one electrical and one mechanical safety feature.

The carriers are provided with easy rolling ball-bearing wheels that are lubricated for life. Because the carriers travel so freely there is a marked difference between loaded and empty carriers, the loaded ones going considerably faster. Consequently, to keep all carriers, loaded and empty, at approximately the same speed, each carrier is equipped with a geared centrifugal brake. The brake prevents one carrier from running into another with a violent crash. It is fully adjustable for various loads and can be set to limit a carrier to any desired speed. It operates somewhat like a governor and does not hamper the movement of a carrier. A carrier starts from standstill just as though it were not equipped with a brake. However, the faster the carrier travels, the greater is the braking action.

The system was designed, manufactured and installed by Cleveland Tramrail Division, The Cleveland Crane & Engineering Co., Wickliffe, Ohio.

Chemistry's Contributions to the Uniforms of War

America's armed forces are the best uniformed in history, primarily because of the chemicals for textiles developed by America's chemical industry since the last war. Uniforms now are dyed with fast colors, and many garments are water-repellent. New bleaching processes and chemicals, resins for coating fabrics, improved detergents and other chemicals all are helping to dress our fighting men better than ever.

Textiles improved by these new chemicals were envisioned and produced for peace-time purposes, but Quartermaster Corps and supply depots quickly adapted them to superior uniforms for soldiers, sailors and marines. The services have made every effort to utilize the outstanding fabrics now available.

In addition to these textile chemicals, the chemical industry produces nylon, rayon and other synthetic fibers for vital military purposes.

Rookies in the last war found it was no trouble to take on the appearance of veterans. A thorough scrubbing or two removed the "newness" from their uniforms. Today cotton uniforms dyed with superior vat colors will not fade for protracted periods despite repeated washings, severe weather, and the most punishing wear. Field jackets, parkas, mackinaws, caps, parachute suits, ski suits, leggings and helmets treated with water repellents shed water and resist spots, stains and perspiration.

Synthetic vinyl resins are used extensively for coating raincoats in place of rubber.

Continuous bleaching with hydrogen peroxide, a recent development, greatly speeds the bleaching of cotton goods for uniforms and other war uses. Cloth formerly bleached in 8 to 14 hours now is turned snow white in two hours by a continuous process rolling out cloth at the rate of 100 yards a minute.

Textiles for military uses other than uniforms also have been enhanced by new chemicals. Mildew-proofing chemicals help fabrics withstand attacks of mold and rot. Fire retardants render tents and tarpaulins less flammable.

U. S. Navy "E" Insignia (twice size) awarded employees of Textile Machine Works July 25, 1941, for outstanding production of Naval Ordnance.

Sheer Fantasy . . . Every woman knows that the enchanting loveliness of her stockings is in the quality of the fabric. Every hosiery manufacturer knows that the first step toward superior knitting results is careful selection of the needles. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

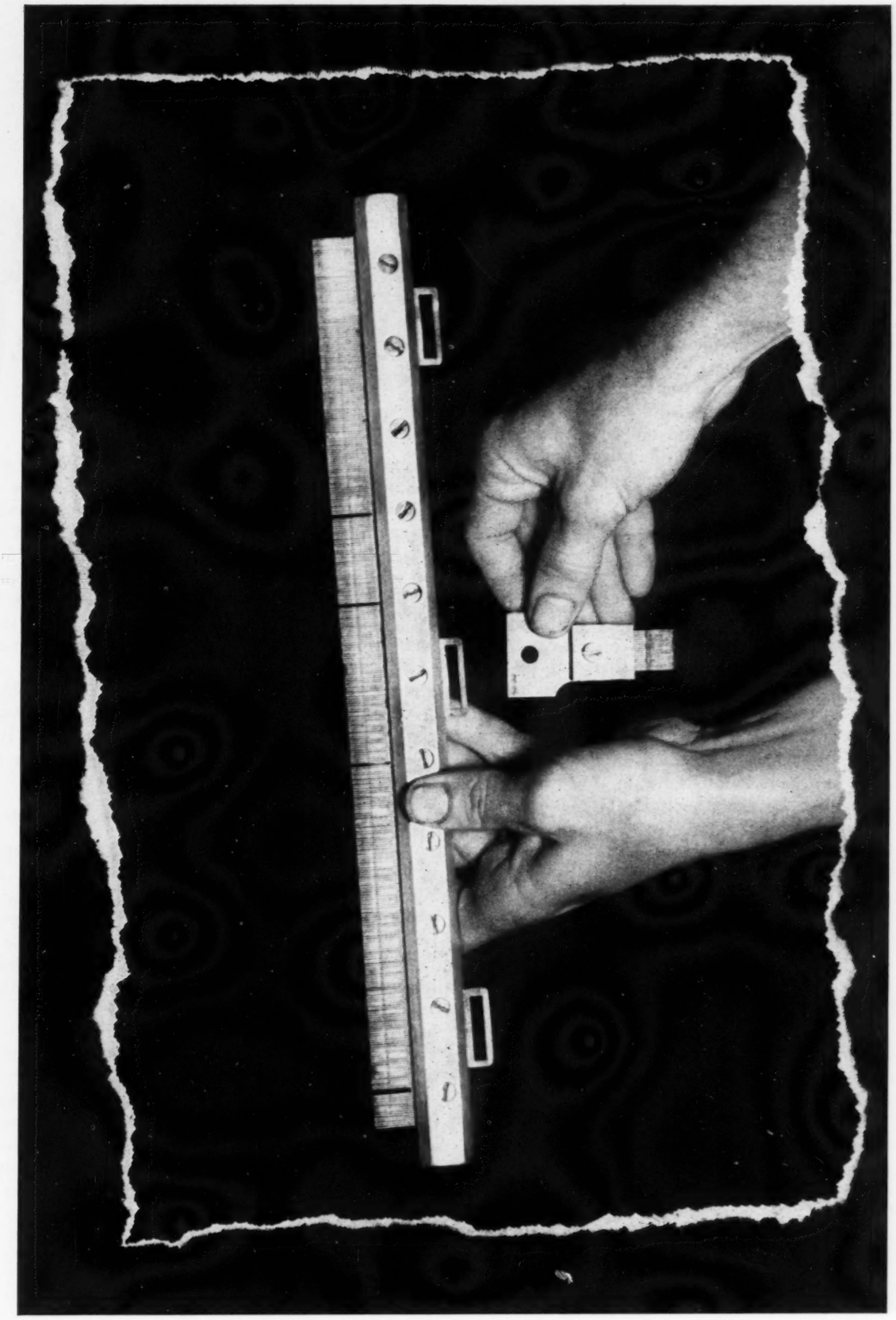
U. S. Navy "E"—awarded Textile Machine Works July 25, 1941, for outstanding production of Naval Ordnance. The white star is evidence of continuing superior performance.

"If every man mend one, all shall be mended."
OLD PROVERB

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at the point of highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

Knitter Hints (No. 11) *Efficient operators keep their bars and fingers filled at all times . . . . . .*



This is the eleventh in a series of pictorial presentations of this nature in the Knitting Section of "Cotton". For information on how reprints of them, full size for posting, may be secured, address Editorial Department, "Cotton", Grant Bldg., Atlanta, Ga.

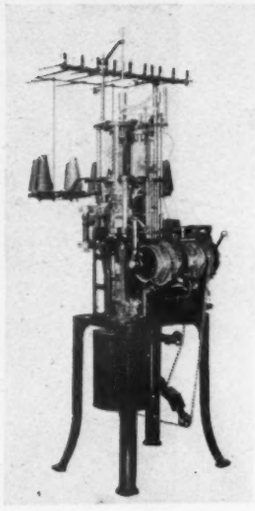
KNITTING KINKS

The Links-and-Links Knitting Machine

IN 18 ARTICLES that have just appeared serially in our Knitting Section, the practical knitting mill executive using the pen name "K. O. Metz" has covered thoroughly and competently the plain two-feed Komet knitting machine, its care, operation, and adjustment—including all of the basic attachments and mechanisms. These articles started in the December 1940 issue, and appeared consecutively, with a few interruptions, until the 18th article in the August 1942 issue.

With the accompanying article, the author begins treatment of the Links and Links mechanism. Here he describes it generally, and in subsequent installments will cover its care, operation and adjustment, with particular attention to adjustments and parts that differ from those of the plain two-feed machine already covered.—The Editor.

Article 19 in a Series on the Komet and Links-and-Links Machines . . . .



The Links and Links Komet

AS THIS is written, the Links and Links Komet machine is the outstanding machine of this day and time. Nothing has been produced to date in seamless hosiery machines that will equal it for the production of high quality anklets, ladies' sport hose or half-hose. The complete range of production possibilities is very broad, covering many distinctive types of goods such as broad rib plain and plaited, single and double feed, horizontal stripes in single feed solid colors or in two-feed combinations, tipped heels and toes, in addition to horizontal stripes and an unlimited variety of delicate patterns or designs, fancy stitches, etc., in the top, leg and foot, or both.

To get a real picture of this modern machine, turn back the pages of seamless hosiery machine history for 25 years and see what was on the market at that time. Compare the machines of that day with today's Links and Links Komet, and we can but marvel and say: Truly, progress has been made.

If we compare today's Komet or Links and Links machines with the Komets of only a few years ago, we can see many changes and additions, all designed to make a good machine better and more profitable to its owner. We presume we are correct in assuming that few changes or additions will be made on today's Links machines for the duration of the war, but we are confident that when the war is over the Komet builders will take up where they left off and go forward. We do not know how much money is invested in Komets by mills in this country, but our guess is the total would be quite a sum, compared even with the modern conception of spending on Capitol Hill.

The freezing order of all elastic yarns by the government put many seamless machines out of production, at least temporarily, until changes could be made to get them back into production. Komets kept right on running, producing goods with genuine 1 x 1 rib tops, minus elastic yarns of course, but still the best top on the market. If and when elastic yarns are once more available, Komets will be ready to use them without costly change-overs or loss of time. In this connection, the Links and Links machine has an added advantage due to the possibility of producing either a plain 1 x 1 or broad rib top or one with patterns or designs in it. Yes, the Links and Links machine was designed to meet the needs of today. It will produce high quality merchandise for which a ready market can be found.

Comparing Plain Komet and Links Machines

The Links and Links machine is not a completely new machine. It is a plain two-feed Komet re-designed and equipped with various devices and controlling mechanisms which make possible the production of goods with fancy designs. The complete driving mechanism, two-feed assembly, yarn changer, lower cylinder sliders, etc., are all identical with the well known two-feed Komet. This feature alone means that mills having both types of machines can keep a limited supply of replacement parts on hand which will serve both machines.

The plain two-feed machine will produce a variety of broad rib numbers; the Links and Links will do all this plus an unlimited number of fancy designs. In this connection we use the word unlimited advisedly, since distinctive patterns by the dozens have been made to date, and when we finally are unable to make something new or different we will know more about its pattern limitations.

How Patterns Are Made

On plain Komets, 1 x 1 top knitting and broad rib are controlled entirely by the slider set-up in both the

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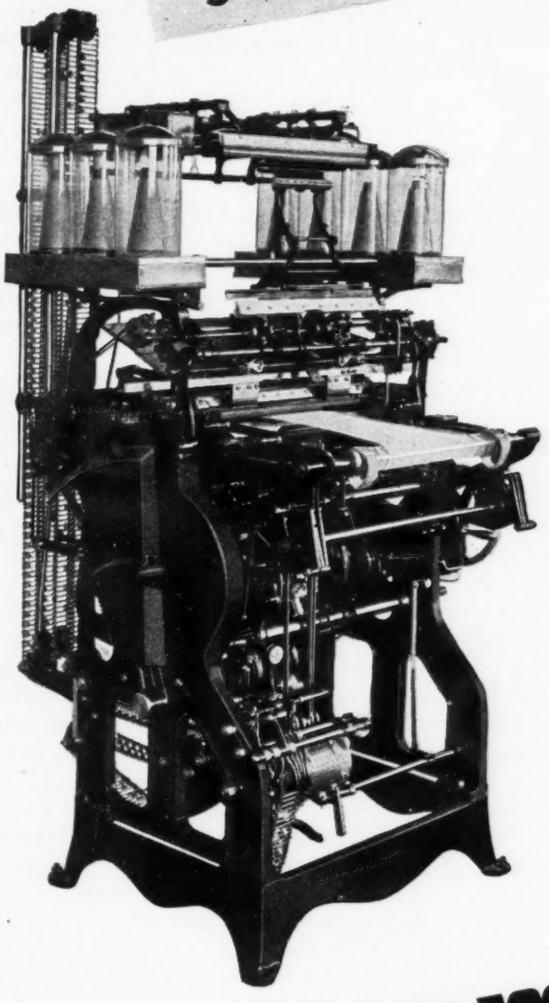
for all your Scrap Iron, Steel and other Metals NOW

Fifty percent of every tank, ship and gun is made of scrap iron and steel. These and all other metals are vitally needed. It's YOUR job. Collect your own, help others collect their scrap materials. Sell to nearest junk dealer or give to some charity agency, or take it yourself to the nearest collection point. Complete information from your local

SALVAGE COMMITTEE



The War Work we are doing is gradually crowding out regular lines so that we are reduced to only limited production on the

WILDMAN

Single-Head, Single-Unit, Full-Fashioned Hosiery

MACHINE

Every one of these machines now in service is living up to the highest demand of today's economy—saving precious production minutes by knitting the entire stocking in one continuous operation, perfect from top to toe. No stops, no slowing down, no bad matching of leggers and footers, etc. Complete information on request.

WILDMAN MFG. CO., NORRISTOWN, PA.

upper and lower cylinders; changing from one set-up to another means re-arranging the sliders in both cylinders. This is not a difficult task by any means, but it does require a certain amount of time, and time on Komets means production.

On Links machines the slider set-up in both upper and lower cylinders remains the same irrespective of patterns, changing from one pattern or style to another can be done easily and quickly by simply re-arranging the pattern pins in the pattern drum. On certain patterns it becomes necessary to re-arrange the selectors in the upper cylinder, however, many patterns can be made on *one* selector set-up by re-arranging the pattern pins in the pattern drum. Pattern making on Links and Links machines is controlled by three main factors: the pattern pins, the selector fingers, and the selectors in the upper cylinder. Patterns or designs are made by transferring certain individual needles or groups of needles from the upper to the lower cylinder and vice versa; in other words, while patterns are being made, the up-and-down transferring mechanism is constantly in action.

The very latest addition to the Links and Links machine is the double patterning device. This device increases materially the range of patterns which can be made and, as its name implies, supplies the means for making turned-down cuff anklets or similar numbers with two distinctive patterns, one for the cuff and another for the leg and instep. This is accomplished by providing an outer casing for the pattern drum with double rows of pattern pin holes; the casing controlled by additional mechanism can be raised after the cuff patterning is completed and the leg patterning begins. Thus the selector fingers make contact with one set of pattern pins while making the cuff, and another set for leg and foot knitting. The foregoing is but a brief outline of the Links and Links machine; it is intended to be just that.

Operation

Insofar as operation is concerned, we find little difference between plain two-feed Komets and Links and Links machines. Obviously, the Links machine is the more complicated of the two, and for this reason it is not operated at as high a speed as the plain machine, but the mere fact that the Links machine is more or less complicated does not necessarily imply that it will not run as well or even better than some seamless machines of today which cannot begin to produce what the Links machine will do. Many things today seem complicated to those of us who do not understand them. Motor cars some years ago were called contraptions; radio, television, teletype and many other things which we take for granted are complicated to most of us, and yet these things are simple to those who understand them. The writer has had a little experience with Komets, and has daily contact with a group of fixers who keep more than 100 Komets, including some Links machines, humming along day after day. When we say Komets and Links machines run exceptionally well, we are merely stating a fact without fear of contradiction.

In the next few issues of COTTON we shall endeavor to make some suggestions in regard to the care, operation and adjustment of Links and Links machines, as has been done in the previous 18 articles on plain two-feed machines, and call attention especially to adjustments and parts that differ from those of the two-feed machines that we have already covered.

K. O. METZ

"Specialist" Fixers on Full-Fashioned?

EDITOR COTTON:

We read with interest and a certain amount of disagreement the article by "CONTRIBUTOR NO. 7074" titled "More About Specialist Fixers" in the March 1941 issue of COTTON. With absolutely no malice aforethought, and after a careful perusal of his article, there are several items we wish to discuss, or hash over; but let it be distinctly understood at the outset that no matter who wrote the article, these friendly controversies help many of us to glean new ideas from the pages of COTTON that hitherto may have been obscured from our vision. There is no doubt but that the thoughts and ideas of the other fellow are relatively important whether they be judged right or wrong and, happily, in a case of this sort, right or wrong is nothing more or less than a matter of opinion.

When "CONTRIBUTOR NO. 7074" wrote of working on a "line" of machines we were immediately impressed with the fact he must be employed in a fairly large mill, for where else would they have "lines" of machines? We gather from this that while the contributor is responsible for a certain number of machines, he is probably limited in scope as to the adjustments he is permitted to make irrespective of whether or not he knows the proper procedure to take to eliminate an irregularity which has arisen. The real intricate work is left up to the head fixer.

While we agree emphatically a head fixer is quite essential, we also are convinced his underlings become imbued with an inferior complex unless they are gradually allowed to use their own brains and perform miracles by trial that heretofore only the head fixer would attempt. The "line" man should be encouraged to call the head fixer only as a last resort.

It is no sin to be wrong; but it is something else again not to try, and even head fixers find many occasions when they are wrong, their strong point being the ability to get to the root of machine trouble without too much experimenting. They usually surmount their difficulties without leaning upon someone else's shoulder for in most cases they have no one to lean upon. That is why they are head fixers, that and the latent fact that they possess enough

Editor's Note: The author of this letter is a full-fashioned mill man. The other discussions on the subject of "Specialist Fixers" were prepared by seamless men. To May 1940, September 1940, March 1941 and September 1941. follow the entire series of letters, see the following issues,

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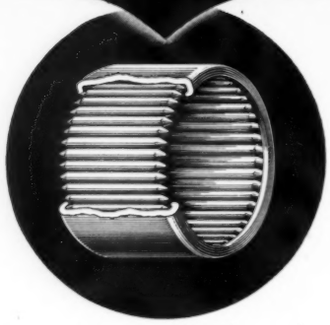
THE "*ROUTINE PART*" IN WAR MATERIEL



INSPECTION keeps a manufacturer "on his metal" these days. Changes come thick and fast in war production. That tank rolling off the assembly line may be a redesign . . . the last shipment of machine parts may have been supplied by a newcomer to the Victory program. And so it goes.

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knowledge about a hosiery machine from the floor up to understand what makes it tick.

The contributor writes of fixers of "average ability", and how machines remain idle waiting for some small adjustment when the fixer is tied up with a big job, with a loss of production the result. When there happens to be a big job to be done, whether it is done by a "specialist" or an "average" fixer, is there anything to hinder either one from attending to all the little troubles first, meanwhile leaving the big job set? Would not this procedure practically assure normal production over the entire plant except for the idle machine?

What kind of a system would you call it where several ten or fifteen minute jobs force a machine into idleness just because the fixer happens to be busy on something more intricate? A method of this sort is quite impractical, whether the mill be large or small, and in a small mill it would be plain suicide. Unfortunately, the small mill finds it impossible to employ a flock of "line" men and a head fixer to top it off; the overhead would be too great. They usually have one man for the day shift and one for the night, the day fixer carrying the load and held responsible for the well being of the machines. He keeps them going, too! To him, little jobs and big jobs all look alike, except for the fact the latter consume more of his precious time; but never, under any circumstances whatsoever, would he permit small jobs to wait just because he was busy with a difficult style change, machine trouble, or any one of the dozens of things that can transpire during the day which call for his immediate attention.

Bear in mind, whether the mill has 20 machines or 200, a good fixer, an efficient fixer, thinks not only of the task at hand, but also about John Doe's narrowing hole, James Smith's bad selvage and all the other little ills that pop up to plague him from morning till night. Yes, it would be very nice if he could just shut himself off from the rest of the machines and let nature take its course; but he cannot possibly be oblivious to small items no matter how big the job at hand. Moreover, this small mill fixer has no one to whom he can appeal for aid. It's his baby and if he does not portion his time correctly the day no doubt shall slip by with nothing accomplished, with the result somebody is doomed to failure. It takes perseverance and fortitude and from our observations it is being done every day in the week, some place, some where.

In regard to operators we shall use the word "average", for with this type and adequate fixing there should not be an excessive amount of needle streaks and menders. It is our contention this nuisance should consume but very little of the fixer's valuable time, unless the mill is run under the overseer system, of which there are very few. While there is no doubt a larger percentage of irregulars registered on the finishing report than on the greige, a jump from 3 to 15 per cent behooves us to believe there must be something wrong with the greige examining. The contributor apparently places these irregulars in the bad match category when he quotes that the "line" man had insufficient time to keep up with the sizing due to being tied up on a big job.

While sizing is important, it should not take hours of the fixer's time once the machines are properly set or as near a happy medium as per courses to the inch it is humanly possible to achieve. Using identical yarn, a mill should operate a week without any sizing at all without having a 12 per cent jump in irregulars. Such a contrast leads us to believe there might have been something wrong to begin with, or else the greige examiner is incompetent. But regardless of that phase of the case, the smartest man in the business can only accomplish so much when it comes to sizing, the silk or yarn itself being responsible for much of our bad match, and uneven length.

That leaves us with the slur cocks and regulator star to contend with, but it is a fallacy to be continually screwing on these adjustments hoping to achieve something we cannot possibly attain, namely, a consistent 2 or 3 per cent mismatch record. The finishing report might emblazon the fact; but then again it is also a question of policy, or just what each individual mill classes as a second. Even on single-unit machines there are variations in length and these machines are very easily adjusted for this fault, so we must take it that much of our sizing seconds are due to things beyond our control.

The contributor asks if an M.D. should also do surgery. Why not? There are many doctors under 40 who are also quite adept with a scalpel. Justly so, for his own benefit and good, should a machine fixer be able to build a machine from the floor up. If he does not thoroughly understand the fundamental principles of a knitting machine from the time the first leg is set into place to its completion, there shall always be something lacking in his general knowledge as to what the *whole* thing is about. Usually, the majority of fixers have this learning, or eventually acquire it.

There are times when a fixer's job can be really provoking when we stop to consider that what fixes one machine might be "no go" on another although the fault appears identical. Couple this with all the lesser details a fixer must put up with and the little man has a busy day, but, his mind must be elastic enough to cope with any situation which may present itself, for to stand by thinking sourly, "This job should be done by the hospital", or, "We should have a 'specialist' for this one", never got anyone advancement, and fixing is about the first step into bigger shoes.

We are well aware a fixer can do but so much, and when he is crowded with work and is evidently getting behind schedule the thing to do is ask for a helper and not for some one else to do the job. By doing the job himself with a helper of lesser knowledge he creates the impression he is not only ambitious but is also skilled, which is the most important of the two.

Continually yelling "wolf" is either a sign of laziness or lack of confidence, and they are both bad. The best thing a fixer can do is pitch in and work; let them pile it on until it reaches the sky. All the time he is learning something new, something he

never knew before, something that not only takes brains but a lot of sweat and toil. If he worries about getting off on time when he is learning it will take him just that much longer until he reaches the stage where he is paid for his brains alone.

We are firmly convinced a fixer should be able to do it all, and the only way it can be accomplished is with a lot of hard work and thought. Too many "line" men always remain just "line" men, only trusted with minor troubles, but in many cases no fault of their own. That is one of our reasons for not liking the system; it holds a man back.

CONTRIBUTOR NO. 7331

Methods of Paying

EDITOR COTTON:

On page 121 of your March issue, "CONTRIBUTOR NO. 7343" asked: "Regarding bad work (seconds, thirds and waste), would not an hourly pay rate plus a bonus be more efficient than the piece work system? What would be a sound and reasonable method of docking seamless hosiery workers for the bad work they pass?"

The first question is somewhat confusing. We presume he means, would not an hourly pay rate plus a bonus induce knitters to produce more good work and less seconds, thirds and waste. There is but one very definite answer to this question: *No*—and we shall attempt to give some reasons why this is true.

First of all, efficiency in the knitting department does not depend on how we arrive at the amount of pay an operator is to receive, but on the amount of good work turned out by each individual operator. In addition to this, much depends on the machine fixers, and, last but not least, a great deal depends on the knitting room foreman.

It is true, however, that whatever the method of arriving at the amount of compensation an operator is to receive for a day's work, it should create a desire to earn the greatest amount possible. Any system of pay for knitting other than piece work would be just as complicated insofar as clerical work is concerned, if not more so, and could not reward individual accomplishment to any greater extent than a piece rate system.

Paying knitters by the hour would put an extra burden on the department head and possibly create opportunities for alibis for production losses. If the collective efficiency of a knitting room depends on the method of payment, it would not be difficult to figure out a system which would bring 100 per cent efficiency.

The amount of pay an operator receives at the end of each week represents what has been *earned*, call it a bonus in addition to a set hourly rate if you like—it makes little difference. It is a known fact that every mill knows approximately how much it can afford to pay a knitter for a week's work; breaking this figure down into a rate per dozen is not difficult. Each style brings its own individual problem and due consideration should be given all factors that have direct or indirect bearing on the production of good work. Wage-and-hour legislation automatically sets a minimum, so piece rates must make it possible to meet or better these requirements.

Setting a piece rate for a given style should be based on facts, not guess work, and these facts can be secured very easily by making time studies which will show the number of dozens an operator can turn out in a day's run. All bad work should also be saved and checked carefully to determine its cause. This work can be separated into various classes, such as machine faults, operator faults, bad yarn, bad needles, etc. This is very important, simply because it is unfair to charge all bad work to the operator when in fact the operator is responsible for only a part of it.

Piece rates should be based on the total production (good and bad work) of an average operator, then the expert operator can be a pace-setter for the others. Go into any seamless mill or manufacturing plant where you hear complaints against piece rates, and you will find the complaint is against the *rate*, not the *system*.

Docking knitters for bad work they pass has caused many headaches. There are several methods in use today. Some states prohibit so-called docking in any form; however, we know of one case where the mill insisted it was not docking in any sense of the word, simply paying the posted piece rate for good work only. Then the state insisted that the individual operator be shown all bad work found in each day's good work, and this system really worked out well for all concerned. Some mills bring all bad work back to the operators for their personal inspection, then get good work to replace it and pay for the full amount of dozens turned in. This adds complications, since styles and sizes are often changed and the odd socks gathered up cannot be used to fill out the dozens from which the bad ones came.

Some mills get around the docking system by paying a small amount per dozen for seconds and thirds, but this makes extra work in keeping records of odd socks until a dozen can be filled out, not to mention the space required to keep such odds and ends.

The best method is a straight piece rate for good work only, which would allow for a reasonable amount of bad work to be passed by the operators. This means getting behind operators who are careless on inspection and replacing those who do not come up to a set standard. Posting a daily record of each operator will show up those who are careless, and this will help reduce materially the amount of bad work passed.

The important factor is full production of good work, and here is where the knitting room foreman, the machine fixers and the operators *must* pull together. The docking problem diminishes as the efficiency of the department increases. The war on seconds and waste must go on always.

CONTRIBUTOR NO. 7369

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TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

June Full-Fashioned Hose Shipments Register 26 Per Cent Drop—Seamless Volume Holding Up Well—Rayon Proportion In Hosiery Mounting—Army Buying Hose And Anklets For Women's Army Corps—Underwear Shipments Larger With Stocks Smaller—Outlook Is For Tighter Rayon Yarn Situation For Home Manufacturers

Philadelphia, August 15, 1942

THE FULL-FASHIONED END of the hosiery industry seems to be on the way to the 60 per cent rate of operation that has been predicted for it in the near future by Government and other officials. The trend of hose shipments is downward and in June this branch of the business registered a decline of 26.4 per cent compared with the same month a year previous and for the first six months of this year shipments of women's full-fashioned hose were off 19 per cent compared with the first half of 1941, according to National Association of Hosiery Manufacturers' data. But the seamless end of the trade is holding up well and for June showed little change from the month a year previous. But in June the proportion of rayon full-fashioned numbers was up to 63 per cent of the total, a new high. Shipments and production of knit cotton and wool underwear in June increased over the same month a year previous while stocks at the end of that month were smaller than a year previous. Outerwear manufacturers are not active, meeting raw material difficulties.

Full-Fashioned

Full-fashioned hosiery manufacturers are passing through one of the most difficult periods in their history. They are not able to buy all the rayon yarns they need because of mounting war needs for this type yarn; they are finding it more and more difficult to keep trained help which is going into war work; they are confronted with recent wage increases which they are unable to pass on to the consumer because of ceilings. The outlook is that war needs will take more high tenacity rayon yarns as time goes on so that this much less will be available to hosiery manufacturers. Then they will have to turn to what they consider less desirable rayon types and also possibly to larger use of cotton yarns. Manufacturers have opened their fall styles and in general the new rayon full-fashioneds will sell at unchanged prices, meaning around $1.00 and $1.25. For example, Kayser has its Victory starting at $7.25 a dozen for the $1.00 retailer. The new rayons have not had what might be called a complete retail test as yet because so many consumers had bought ahead and still possess nylons of last year so that what the reaction to all-rayons will be is still not known on a nation-wide scale. During the first half of the present year all-silk full-fashioned shipments dropped about 90 per cent when compared with the same period a year previous but during the same time shipments of all-nylon dropped almost 70 per cent. During these months shipments of rayon full-fashioneds accounted for slightly less than half of the total while cotton full-fashioned showed up to the extent of only about 5 per cent of the total full-fashioned shipments. Indications are as the war goes on the American wearer of such hose will have to go down into hose made of coarser yarns and more into the cotton numbers. It is also sure that for the duration anklets and the bareleg fads will expand more than they have to date.

Half-Hose

These manufacturers have enjoyed a good half year so far as volume was concerned, being in receipt of large orders from the armed forces in addition to large-scale coverage by the civilian trade. This situation brought about a gain during the first half of the year of almost 11 per cent in shipments compared with the same 1941 months but a feature of the business has been the excellent volume in the short type socks or slacks. The latter during the first six months registered a gain of almost 23 per cent although the pace was slowed down in June, during which month there was a drop of 6 per cent in half-hose shipments and a decline of almost 15 per cent in shipments of slacks alone. Military buying in half-hose so far this year has not been nearly so active as it was late in 1941 although there are fair sized deliveries still being made to these buyers. Indications are there will be no large additional Army buying of such lines for the next few weeks but the trade looks for a resumption of this to come early in the fall. During the first half of the year shipments of seamless cotton half hose spurted almost 10 per cent while those in wool, a large Army type, gained more than 3 per cent over the corresponding period a year previous.

Seamless

Shipments of women's seamless lines this year to the end of June registered gains of more than 7 per cent with large increases in rayon and an appreciable decline in silks. During the same months there were also large gains in other seamless numbers such as anklets and athletic socks as well as in children's numbers. Anklet shipments in the first half of the year showed gains of almost 18 per cent, children's numbers of 17 per cent while athletic socks had a gain of more than 30 per cent over the same months in the previous year. By June these percentage gains had reached even higher levels with data for that month showing an increase in shipments of women's seamless wool of almost 200 per cent and seamless rayon of slightly more than 100 per cent but in other seamless lines the first half percentages dropped to a lower level. For example, shipments in June of anklets fell off slightly compared with a year previous, while gains in children's and athletic socks were very small.

Underwear

Although there was a decline for the first time in months in new business, June witnessed further gains in shipments of such merchandise as well as a drop in stocks, indicating that the industry remains in a very active position as has been true for months. Production in the wool and cotton knit division of the industry in June was off a shade compared with the preceding month but remained above June of the previous year. Part of the reason for this less favorable showing of such mills is the letdown in military

buying, there having been fewer Army underwear orders in recent weeks and with recent orders indicating less of the protective type underwear for the Army it may be that July will show a continuation of this trend toward less activity among underwear knitters. For the first half of 1942 production in the knit cotton and wool division was 9 per cent ahead of the same months a year previous. Typical of the smaller June bookings was in men's heavyweight drawers and shirts in which new orders totaled in June 236,000 dozens compared with 944,000 the previous month. The stock position at the end of June was only slightly changed from a month previous and there was a small decline in the number of knitting machines in operation, the total being 12,855 compared with 12,923 in May and 12,630 a year previous.

Hosiery Mills Face More Acute Situation in 1943

The coming year is expected to be one of constant shortages of hosiery with utility goods the rule, as in England, with the finer denier rayons becoming even scarcer than at present among the retailers. These manufacturers must in the meantime face a further shrinkage in their output as well as the parallel problem of what to do about idle equipment, which last year was estimated to have an actual value of around $150,000,000. The present position of the hosiery industry was brought about by a chain of events over the last year. It was a year ago that the Government allocated 10 per cent of the rayon yarn supply, equivalent to about 39,000,000 pounds a year, to the full-fashioned hosiery industry to ease the effects of the silk freezing order. While this percentage of rayon yarn allocated to the hosiery trade was increased early this year, this total has been recently dwindling rapidly as the Government took more yarn not only for its own consumption but a quota was also set for Latin American countries.

Some relief was afforded the hosiery trade by the Government's permission shortly after the freezing order, to use silk in process which has amounted to about 5,000,000 pounds. If this relief had not been forthcoming there would be no silk stockings on the market today. Appropriation by the WPB of all nylon this year placed the full-fashioned industry in a tighter position, making it almost solely dependent upon rayon yarn so that the 500 odd mills in this field are expected shortly to be reduced in their operations to about 60 per cent of capacity which has already been forecast by heads of the WPB as well as by the National Association of Hosiery Manufacturers. The present output of the industry consists almost wholly of rayon goods although this has not yet been felt at retail as many such outlets still are offering their last lots of silk and rayon goods.

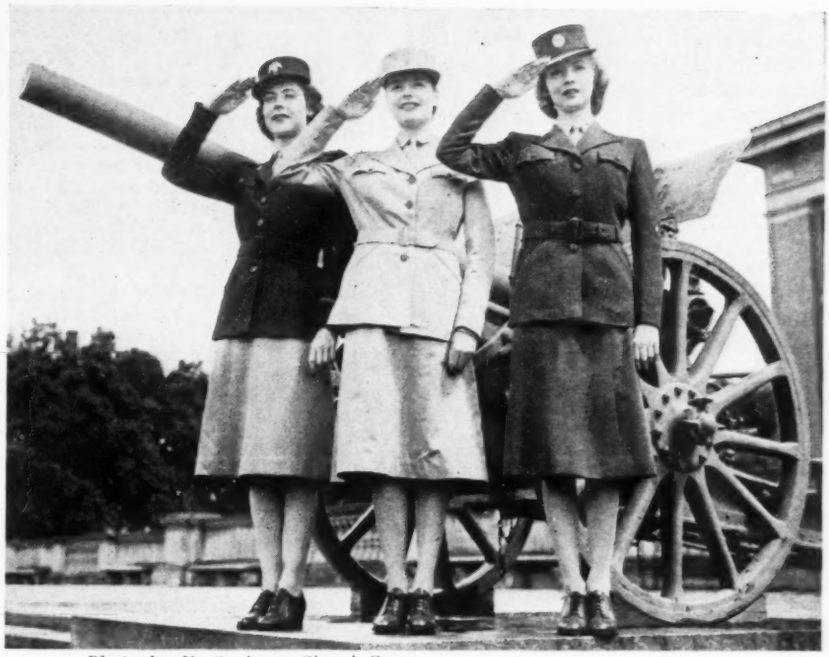

Photo by U. S. Army Signal Corps

The WAAC uniforms. Left to right, officer's uniform; officer's summer uniform, and auxiliary's winter uniform. The Quartermaster Corps designs and furnishes the uniforms worn by the Women's Auxiliary Army Corps. Specifications for hosiery given in article in "Trends and Highlights of the Knit Goods Markets" in this issue . . . . . .

Military Uses of Rayon Due to Expand Sharply

Rayon is rapidly becoming one of the most important materials used in the manufacture of special military textiles and high tenacity yarns have made possible the development of many new cloths. Rayon was a scarcely-known textile fiber at the time of World War I and as late as 1941 not more than 5 per cent of the total production of such yarn was going into war goods. At present about 40 per cent of the production is required for military needs and with further machinery being converted to the manufacture of very strong rayon yarns, it is estimated that at least 40 per cent of the 1943 output will be used by the armed forces. High tenacity rayon yarns are widely used in making tires for Army trucks and bombers. Research showed that the rayon cords were more serviceable than other types of tires for this use and that it was also possible to use less rubber in these tires. Increasing demand for rayon for this purpose is at the present time limiting the amount of high tenacity rayon available for other war needs.

Self-sealing gasoline tanks and coated materials for insulation purposes also call for a considerable poundage of the high tenacity yarns. Newer developments in this field have been a variety of parachute cloths made from rayon, the result of co-operation between the yarn firms, weaving mill technicians and textile experts from the various branches of the armed service. At present rayon weavers are turning out cloths made of high tenacity yarns which will be used in the manufacture of cargo and supply chutes and flares. In addition, the Air Corps purchases cloths for targets made from semi-high tenacity yarns. Considerable experimental work is going on at mills for the development of rayon powder bag cloths and a number of technicians say that this yarn is more suitable for this purpose than yarns spun from re-processed silk. Flags and regimental standards which were formerly woven from silk are now being made of rayon.

Curtailment Creates Brand Problem for Knitters

If war demands should bring about the concentration of hosiery plants in this country as a result of requirements for increased production of the more essential wartime needs as has been the case in Great Britain, the industry here would be faced with the question of how to preserve long-established trade names. The question at that time will be how to keep brand names and mill identities alive no matter how little of the merchandise is being produced or how long the war may last. Several manufacturers, in commenting on this possible future development, say that a working agreement such as that reached by several British manufacturers, whereby two or

more lines of distinct brands and origin are produced on a limited scale at a single plant appears to be the only practical answer here. While there is naturally a reluctance among long-established mill men to permit their brands to be handled with that of a leading competitor through the same office, it is realized that this will be a point of no importance to WPB officials when the time for action comes.

Cosmetic Hosiery Fad Seen Hitting Peak

The bare-leg fad with many painting their legs with cosmetics of various types has made additional gains over the last month so that the hosiery industry is upset about the matter, appreciating that the vogue has reached proportions that it never did in the past. The situation has become so marked that the board of directors of the National Association of Hosiery Manufacturers at its last meeting discussed this in detail. There was some suggestion of starting a movement to combat the vogue but the final decision was that the "leg-painting fad" should be allowed to run its course. Manufacturers do not consider that it will be of long duration since it was held by several hosiery executives to lack a sound basis. Any campaign, it was felt, to combat the fad would only "dignify it". One new development which may be of help to the hosiery industry in this regard is that certain of the cosmetics used in these leg painting preparations are restricted by the WPB and such manufacturers have to keep their production in line with that of 1941. As many of these leg-painting preparations were not on the market that year it is considered likely that their coming production of such cosmetics will be greatly restricted.

Used Silk Hosiery Frozen by WPB

The War Production Board on July 20 froze all used silk hosiery in the hands of dealers with the exception of used silk hosiery which is suitable for repair and for resale as second-hand hosiery. The silk to be reclaimed from the used silk hosiery frozen by the order, No. M-182, will be used for war purposes. An inventory of used silk stockings in the hands of those affected by the order has been commenced by WPB and the results of this survey will determine whether any additional quantity of used silk is necessary. For the present no campaign for collecting old stockings from the general public is contemplated. Frank L. Walton, deputy chief of the Textile, Clothing and Leather Branch, said experiments were conducted for about a year to find a way to make war products entirely from discarded stocking silk, and that only recently have these experiments proved successful.

"For some time," said Mr. Walton, "a small percentage of the reclaimed silk could be used when blended with longer silk for the making of powder bags, twine and other uses, but not much discarded silk could be used for this purpose as only a limited amount of other silk was available to blend with reclaimed stocking silk. Accordingly, the Government has had no way to make use of the old stockings heretofore except in small quantities. In the meantime the Government has been successful in utilizing cotton and other fibers in place of silk for powder bags and other war purposes. It is now felt that recent developments make it possible to use sizeable quantities of discarded silk stockings." Mill men with long experience in weaving ordnance cloth are somewhat skeptical about the possibilities of converting used silk hosiery into powder bags for heavy artillery use, notwithstanding this statement of the WPB. They cite two main objections to the use of such hosiery. In the first place they find that the cost of converting such material into yarn is prohibitive due to spinning difficulties. In the next place, they say that most of the used hosiery in dealers' hands now contains a little nylon which has been used to reinforce the silk. Nylon, it is stated, cannot be used in the manufacture of powder bag cloths since it does not burn out like silk but would remain behind to clog the gun.

New Underwear Buying Smaller

The last Government data on the underwear industry indicate that there was a let-down in June in new business booked which was also reflected in the unfilled orders on hand with manufacturers at the end of that month. This let-down in June was also in evidence in the production of these mills. In the important cotton and wool division, production amounted to 2,441,000 dozens of garments this June compared with 2,477,000 dozens in the preceding May. This June, however, was well ahead of the same month a year ago and in the unfilled orders of this division, it is shown there was a drop from May of almost 10 per cent but this June's total was

FORECAST

(Opinion submitted by COTTON's market correspondent)

Philadelphia, August 15, 1942

AFTER THE initial spurt in activity after Pearl Harbor which lasted until June, business adopted a more cautious policy which resulted in a much smaller new volume for textiles during the months of June, July and August to date with predictions being made that this will last possibly to early September. This signifies that business is at its first crossroads since December 7. From then on to early June the emphasis was upon as large orders for textiles for the armed force as manufacturers could handle but now military buying has been much smaller as both the Army and Navy appear to have enough on order for the next few months.

Civilian orders also dropped off, this being due to the removal of much speculative buying after the General Maximum Price Regulation and more effective OPA price control in many lines. But there are signs now that this lull in new orders will not last through the remaining months of this year. Military buyers say they will probably come back into the textile markets during September to place contracts for delivery during the first half of 1943 and at the same time inventories of civilian goods are declining at such a pace that by fall many of these operators will be compelled to place new commitments.

How large the military buying will be depends on the course of the war which has also been at a crossroads depending on the outcome of vital developments in several parts of the world and especially in Russia. Should Germany be able to bring much equipment on the eastern front to the western part of Europe, experts say the war will last several years longer. If this is so it will cause changes in our financing in this country and also in business. It will cause another great wave of military buying. But there are few signs that even this will bring about the inflation seen in previous wars. Office of Price Administration and other Government agencies are fighting a good fight so far as inflation goes excluding commodities and labor but now these must and will be controlled and quickly.

In addition, it is certain that taxation will pass the present signpost and enter a region where rates are higher than even discussed in the House in recent weeks. It is also sure that new sources of taxation will have to be developed including a sales tax and heavy rates on many already-taxed products. All this leads to the conclusion that business and the profit system are in for the most difficult period in history and the length of the war will furnish the real answer in this connection as to what changes will evolve from the present holocaust.

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NOW YOU CAN HELP

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New Treasury Ruling Permits Purchases UP TO $100,000, in any Calendar Year, of Series F and G WAR BONDS!

The Treasury's decision to increase the limitations on the F and G Bonds resulted from numerous requests by purchasers who asked the opportunity to put more money into the war program.

This is not a new Bond issue and not a new series of War Bonds. Thousands of individuals, corporations, labor unions, and other organizations have this year already purchased $50,000 of Series F and G Bonds, the old limit. Under the new regulations, however, these Bond holders will be permitted to make additional purchases of $50,000 in the remaining months of the year. The new limitation on holdings of $100,000 in any one calendar year in either Series F or G, or in both series combined, is on the cost price, not on the maturity value.

Series F and G Bonds are intended primarily for larger investors and may be registered in the names of fiduciaries, corporations, labor unions and other groups, as well as in the names of individuals.

The Series F Bond is a 12-year appreciation Bond, issued on a discount basis at 74 percent of maturity value. If held to maturity, 12 years from the date of issue, the Bond draws interest equivalent to 2.53 percent a year; computed on the purchase price, compounded semiannually.

The Series G Bond is a 12-year current income Bond issued at par, and draws interest of 2.5 percent a year, paid semiannually by Treasury check.

Don't delay—your "fighting dollars" are needed *now*. Your bank or post office has full details.

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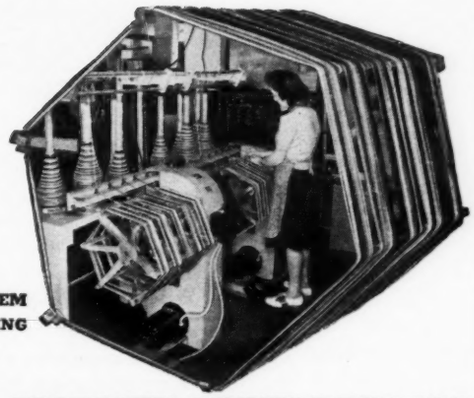

FIDELITY
TWIN-UNIT SYSTEM OF SKEIN REELING
TWO TYPES

SINGLE-END TYPE

FIDELITY SKEIN REELERS

Speed Production with 30- to 50-second doffing cycle

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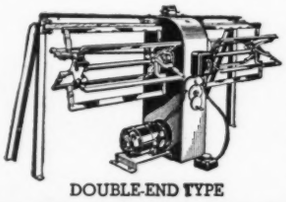

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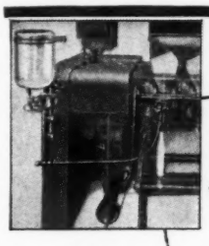

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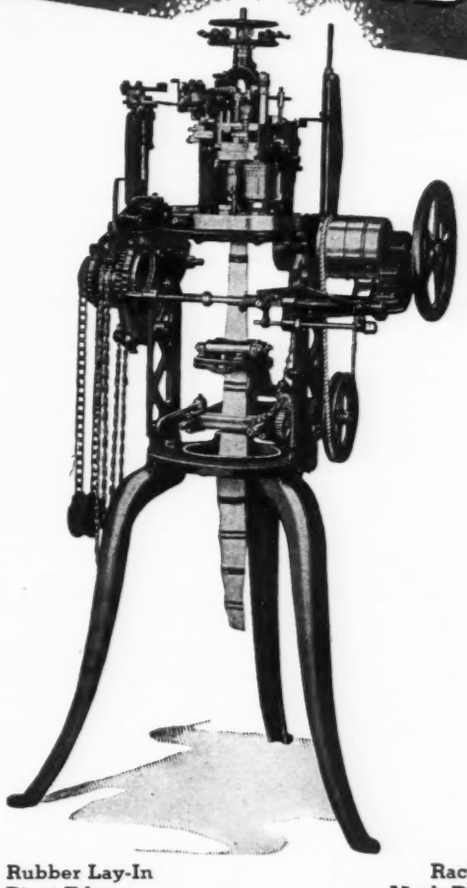

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Let the new, modern Brinton Ribbers carry the burden of your production problems. Modernize your old ribbers, by converting to the latest styles. . . . For dependable, economical production—rely on Brintons.

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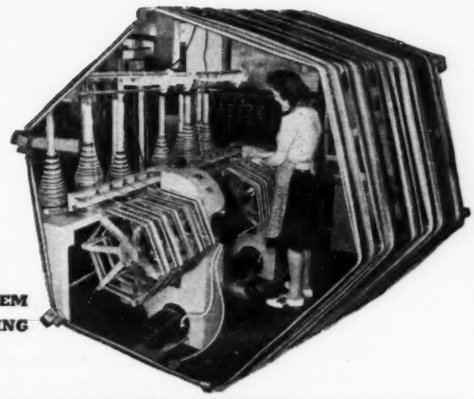

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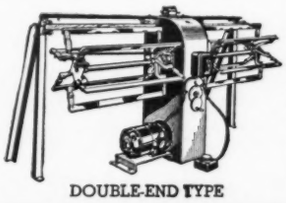

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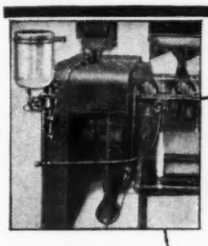

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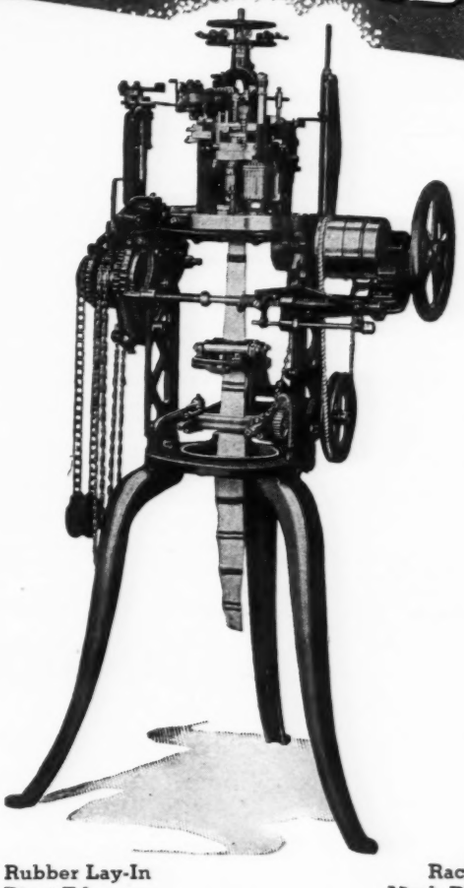

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ly the Textile Machine Works reported that 14,300 machines were in these plants in 1941 compared with 16,300 in 1940 and that for each new machine installed in the country last year five old ones went to the scrap heap.

Shift to Non-Elastic Tops for Men's Lines

Men's and children's elastic top hosiery is being replaced by the mills with former types of closely knit rubberless tops and in addition mills which were beginning to turn out women's anklets with elastic tops prior to the WPB order, banning the use of elastic yarn, are also working on what were formerly standard types of cuffs. Some of the last elastic top goods did not appeal to buyers because of the skimping in the use of elastic. This brought numerous complaints from the retail end so that manufacturers turning out the new style tops are expected to find little or no sales resistance. Unlike underwear manufacturers whose knitted shorts were largely popularized by the use of elastic waistbands, hosiery manufacturers assert they had not depended so much on elastic top hose for the bulk of their sales.

Hosiery specifications adopted for the WAAC are recommended for the Navy's women's organization, the WAVES, by the National Association of Hosiery Manufacturers. The association stated it would simplify both the Navy's task and the industry's if it were possible to adopt the same specifications on full-fashioned goods. Hosiery for the WAAC is to be full-fashioned rayon made on a 45-gauge machine with the leg and foot of the hose to be made of 100-denier, the welt and shadow welt of 150-denier and the heel, sole and toe to be cotton plated. Their cotton hosiery is to be of 42-gauge made from 60s two-ply mercerized while the anklets are to be made on a circular knitting machine having not less than 200 needles and also from mercerized yarn. Yarns of 30s two-ply mercerized are to be used in the leg and foot and 24s two-ply in the toe and heel.

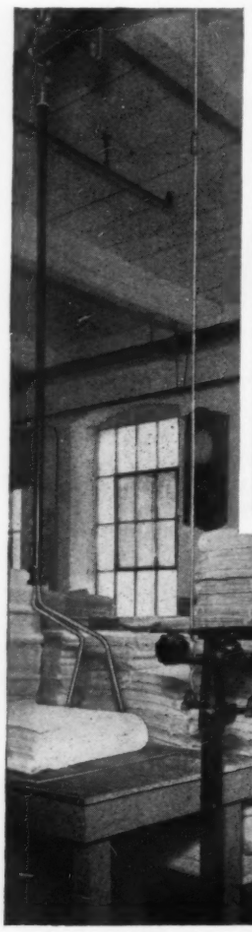
Fine Cotton Curb Hits Hose Trade

A recent order by the War Production Board on the use of domestic and foreign long-staple cotton will tend to narrow further the yarn supplies available to the hosiery industry. This trade is already unable to obtain enough rayon to replace its lost silk and nylon and the most recent order will cut down on the supply of cotton yarn for making full-fashioned hose. A few of the mills will be offering limited supplies of fine mercerized hosiery during the next few months made from yarns previously in the hands of producers but it is expected thereafter it will be a question largely of rayon and coarse cottons with the average buyer having no other choice. Several manufacturers declare that this indicates a time in the not-distant future when utility stockings will be the fashion.

Defense Course in Textiles at N. C. State

E. W. Ruggles, director of the defense courses conducted at N. C. State College, Raleigh, N. C., under the supervision of the U. S. Office of Education, has announced that the sixth course in fabric testing and inspection will open on September 28 and run for 12 weeks. All expenses except board, room rent and books are paid for by the Federal government.

Students who enroll in this course will be taught elementary textile design, fabric analysis, fabric calculations, the care and operation of fabric testing equipment, physical and chemical tests for the identification of textile fibers, as well as a study of yarn and fabric defects.



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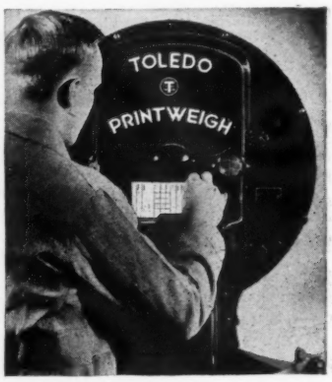

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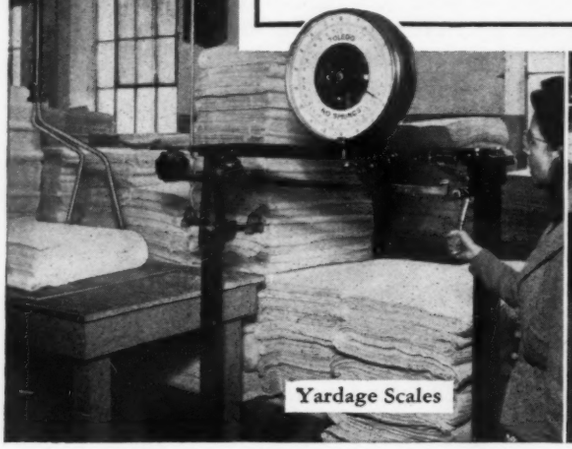
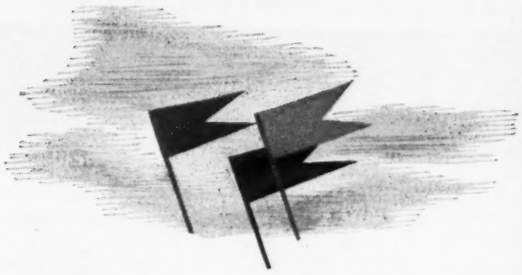

Yardage Scales

Lap Scales



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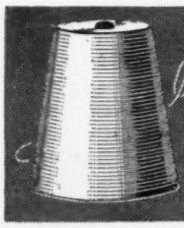

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TRENDS—YARN MARKETS

Another Dull Month In Cotton Yarn Orders But Deliveries Remain Close To Record Peaks—Reduction In Carded Ceiling Expected—More Rayon Yarns To Go Into Military Items Meaning Less for Hosiery And Other Civilian Users—Worsted Knitting Hit By War

Philadelphia, August 15, 1942

SALES COTTON YARNS have lost further ground over the month because shipments have been much larger than new contracts, both in the military and civilian ends. This represents more than two months the same thing has been noted so that users' stocks of such yarns have been well cut down, indicating that by September there will be a resumption of buying by both. But in the meantime there has been an easing in prices on certain sizes of carded, especially in coarser numbers which are in greater supply. Knitting counts while easier in coarse sizes are the strongest of the carded list. Rayon yarns are moving very actively and the civilian trade will take as much as they can get but the percentage going into war materials of various kinds is constantly mounting. Predictions are heard that instead of the current 20 per cent of rayon yarns going to the military this will by early 1943 have mounted to 40 per cent. Hosiery and other civilian knitters must be affected unfavorably by such trends. Worsted knitting yarns, hit by wool conservation orders, are about "out" for the duration and substitutes are not going over well as yet.

Cotton Yarns

Dullness in new business in cotton yarns has continued over the last month with indications this condition will continue into next month which would be a three-month period in which new poundage was decidedly smaller as compared with the exceptionally active business which had been booked more than a year previous. This is more apparent in carded qualities than in combed, large military demands for the latter being largely responsible for the continued tightness in practically all combed qualities. There has been comparatively little new combed volume but spinners are very active on old commitments, still having several months business ahead which in instances will keep them fully engaged until the end of this year. But in carded types the proportion of military business is much smaller than in combed so that the decline in civilian quarters has affected such yarns much more than combed.

The trade expects the Office of Price Administration very shortly to announce a new and lower carded yarn ceiling, reports of which have been current for the last couple of months but which now is expected any day. It is reported that this will reduce prices of many sizes of carded with the greater reductions expected in the coarser numbers and in view of this buyers of all classes have been postponing new commitments. This has been done because buyers are uncertain whether the proposed ceiling change would affect old contracts. The same policy has been followed by commission yarn firms for the last couple of months so that in several instances inventories of such houses have now reached the lowest point for many years. At the same time manufacturers have also been working down large holdings of yarns which earlier this year in instances necessitated their renting additional warehouse space.

Early this month the War Production Board issued an amendment to the combed yarn order which postponed until November 2 the time in which such spinners will have to begin earmarking large parts of their production for use by the armed service. The original order issued May 28 required earmarking to begin not later than June 29. The amendment does not change the percentages of combed yarn to be earmarked, these remaining at 40 per cent of a mill's production of medium combed yarn and 65 per cent of coarse combed yarn. Combed spinners while admitting this postponement will give civilian buyers of combed yarns a larger poundage over three or four months assert that this will not be more than 5 or 10 per cent over that which they have been able to buy previously. It is expected to help mainly civilian makers of knit goods that consume single yarns because bulk of the production of two-ply combed was previously well booked ahead for military orders.

Lack of new business over recent weeks in the carded end of the business has resulted in considerable price easing particularly in the coarser numbers or from 20s down. This has enabled some knitters, able to use the latter types, to buy slightly under the ceiling level, although the reductions have not been as severe as have occurred in coarse count ply carded. Reductions in the latter yarn have been as much as three cents under the ceiling and largely due to the sharp tapering off of new business in counts used in the manufacture of cotton duck. This has come at just the time spinners' labor costs have been rising because of competition for workers from the war industries but this has been offset to some degree by a lowering of spinners' costs through a decline in raw cotton to a level considerably under the 20.37-cent maximum price set in the March ceiling. The labor problem has already caused some curtailment of production, this being as much as 20 per cent with a number of carded yarn producers.

Rayon Yarns

There are definite signs of a further tightening up in the rayon yarn situation during the last quarter of the year. While it is not definite at this time just what type and how much rayon the Army and Navy will require during that period, producers are of the opinion that a greater quantity of such yarns will be needed for military cloths. Stepping up production of both high tenacity and semi-high tenacity yarns to meet war requirements will also result in a further loss of standard counts used in civilian goods. With war needs rising and with allocations for export and for the hosiery industry, it is clear to rayon weavers and knitters that they must expect further cuts in yarn quotas, which in many instances is causing hesitation among manufacturers in connection with their development of new constructions and styles for the spring season of next year. Another trend that may reduce civilian supplies is that a number of producers have stepped up their output of special yarns which in some instances is now estimated to account for from 12 to 25 per cent of their production, the latter figure referring to some of the medium-sized companies.

Increasing war needs combined with heavy civilian demand caused American rayon yarn production during the first half of this year to break all records. Output during the first six months totalled 234,700,000 pounds as compared with an output of 218,200,000 pounds for the corresponding period a year previous, a gain of 16,500,000 pounds. War uses for rayon have increased from about 5 per cent of the total production in 1941 to about 20 per cent of the current output of the industry. The yarn is being used for a wide variety of ordnance, air corps and navy cloths as well as for tire cords and linings for several Army garments. Newest among the war uses are the knit goods purchases being made by the Army for the WAAC.

Worsted Yarns

There have been several favorable developments in connection with the yarns for the outerwear trade over the last month. Spinners of these counts have been hard hit by the wool conservation order so that the outerwear industry has been able to secure only a very restricted poundage of yarn for the civilian end of the business. This situation was eased somewhat when the War Production Board on August 14 released mohair completely from the restrictions of the wool conservation order. Previously mohair came under the restrictions of new wool except that its use for civilians was on a more liberal basis. The amendment removes mohair from the category of new wool and permits its unrestricted civilian use.

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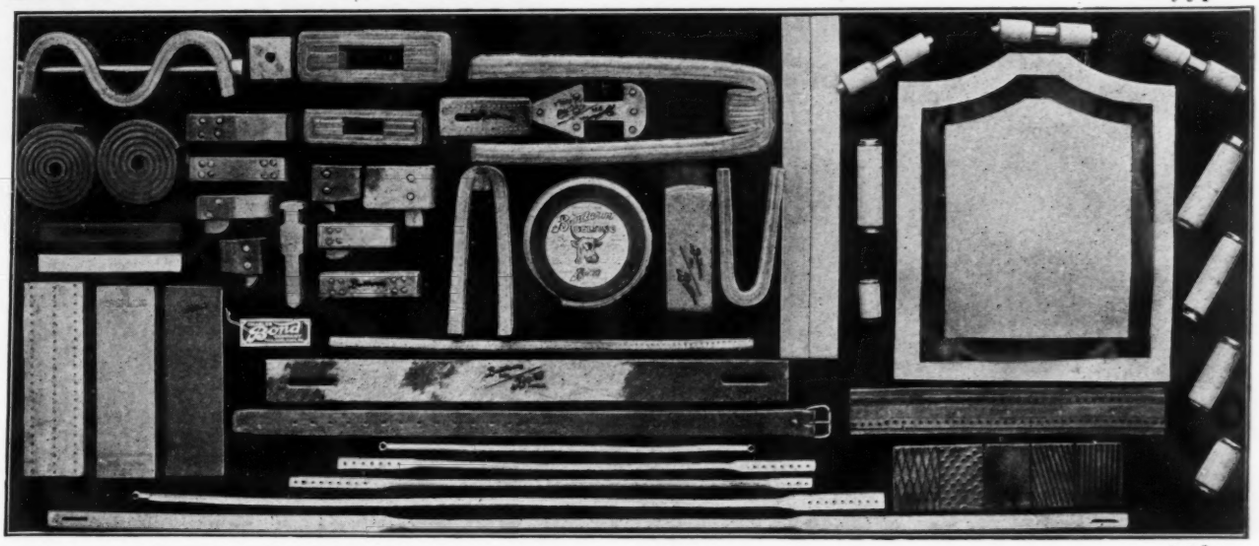

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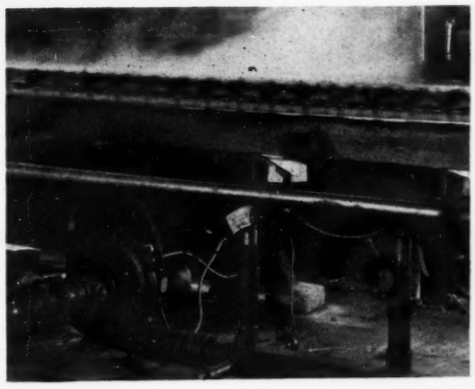

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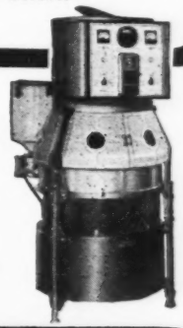

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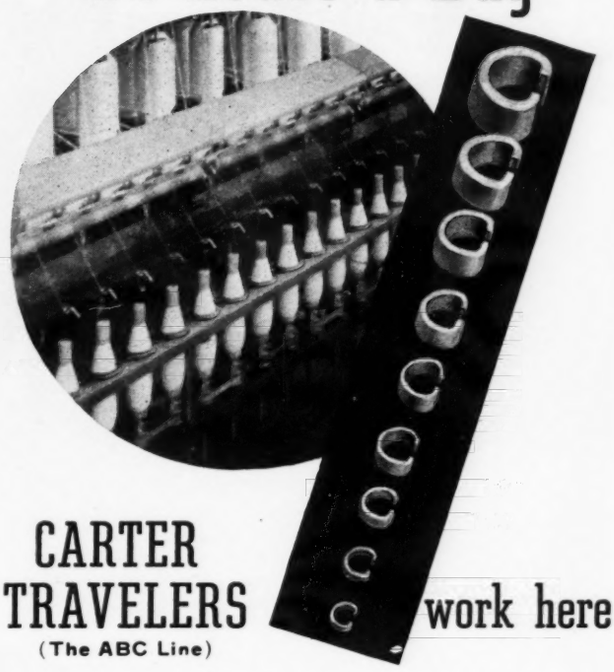

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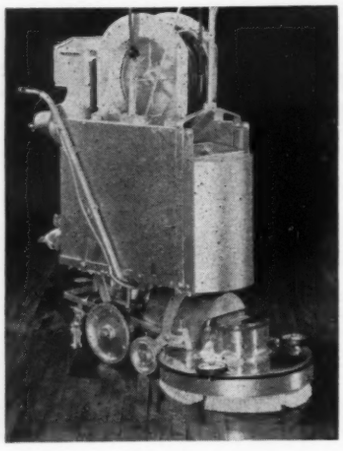

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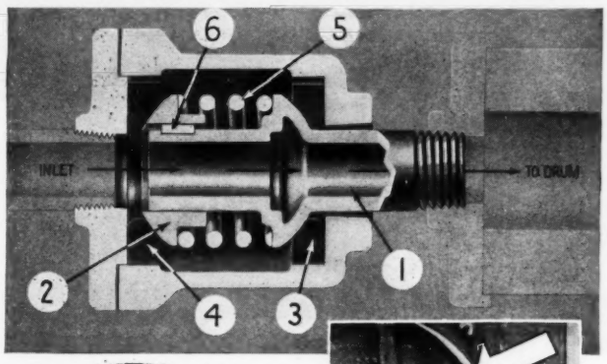

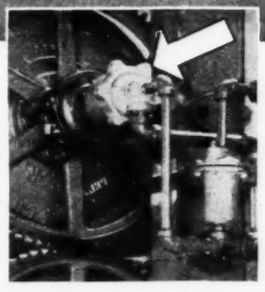

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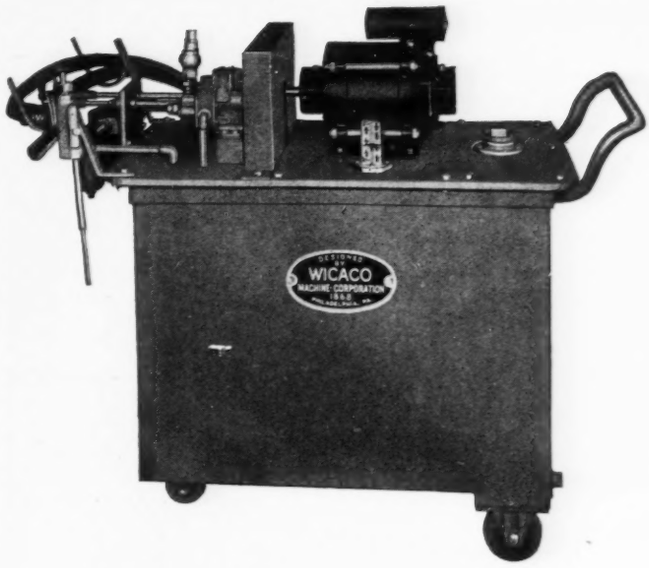

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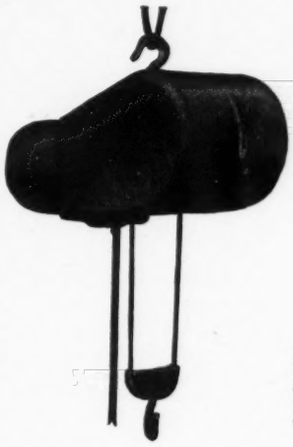

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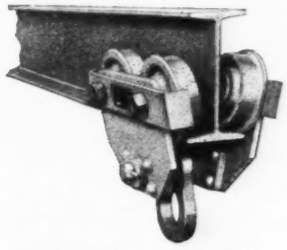

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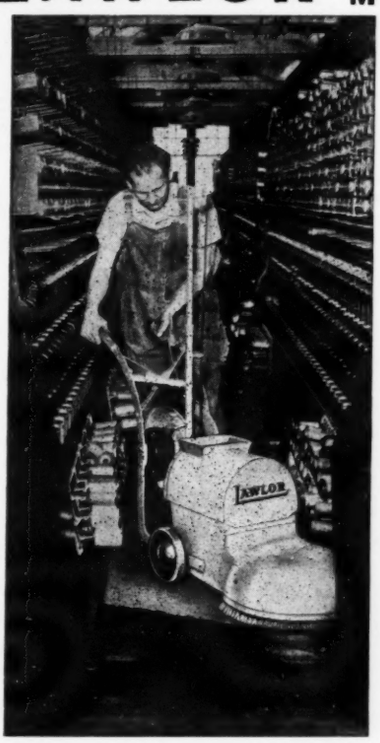

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These modern, motor-driven machines are saving time, labor and money for mills everywhere.

The very best equipment to keep any kind of floor spotlessly clean—concrete, composition, wood, tile, linoleum, cement, etc.

Strong, sectional scrub brushes are easily replaced with soft polishing brushes for waxing and shining floors.

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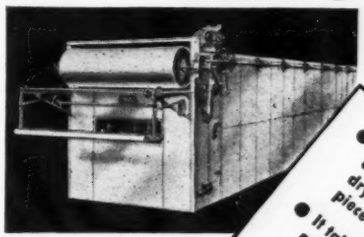
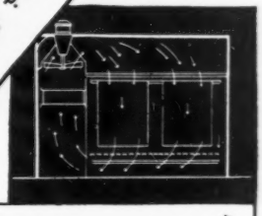


- This is a completely new type of automatic loop or festoon dryer for drying dyed or finished piece goods without tension.
- It takes goods as it comes out of a finishing quetch, or in the case of dyed goods, from a truck.
- The material is carried through the dryer while heated air, circulated at high velocity by fans of special Proctor design, is directed down into each loop.
- As the girts on which the goods is suspended move through the dryer, they revolve intermittently, so that no part of the goods is in contact with anything for any appreciable length of time.
- The New Proctor Loop Dryer assures perfectly uniform results and offers unheard-of capacity in a very compact unit.



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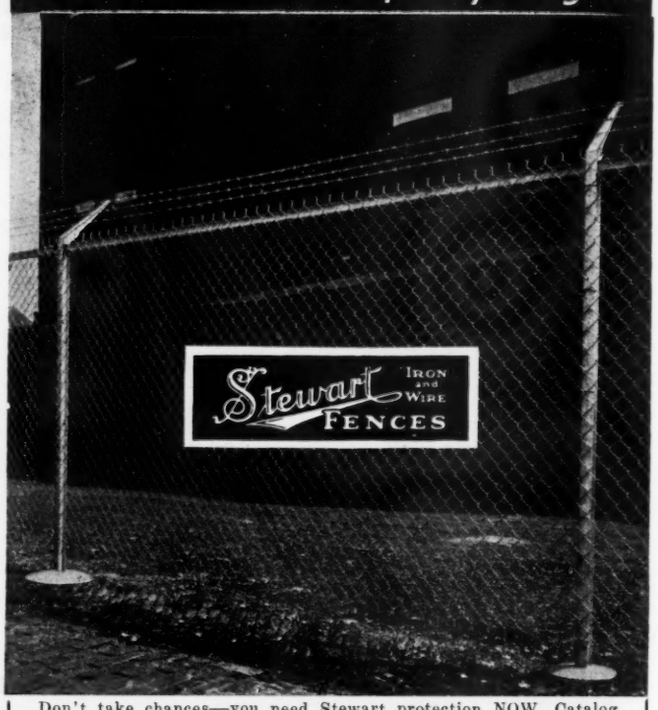

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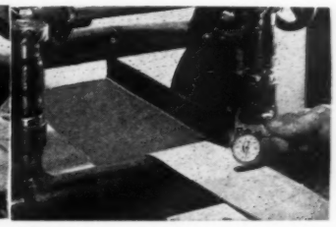
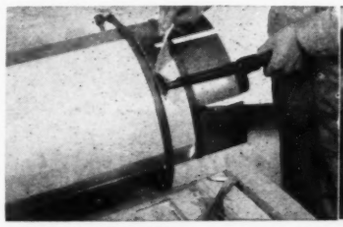
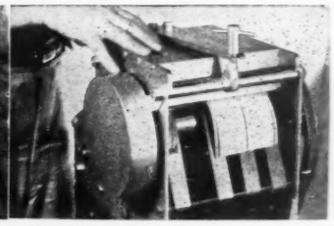
1 Stripping machine . . . cutting the skins into strips of uniform width . . . only the most suitable parts of each skin are used



2 Splitting machine . . . after our special conditioning process, strips are split to precision dimension, and checked by gauge

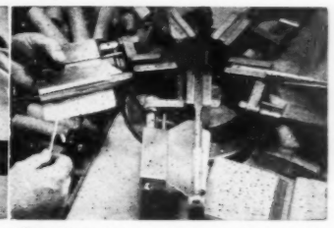


3 Cutting long Aprons . . . every Apron is cut lengthwise of the skin to insure against stretching, warping or distortion in use

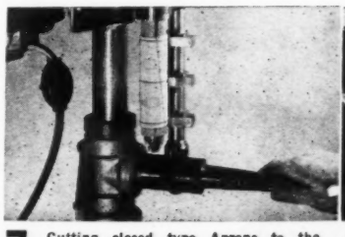


4 Cutting open type Aprons . . . supplied with accurately beveled ends, with or without cement [as ordered], for a perfect lap

5 Skiving . . . cutting the beveled ends . . . exact accuracy insures that the lap will be of the same thickness as the Apron throughout



6 Cementing . . . 7-degree angle lap of the closed type Aprons is firmly cemented . . . our special machines do this work well



7 Cutting closed type Aprons to the specified width—on our precision machines operated by intelligent and skilled craftsmen

8 Inspection before packing . . . every Apron, open and closed type, carefully checked for accuracy of material and workmanship

Our Aprons are gauge-tested for UNIFORMITY at every point. That's why they FIT! Send us a trial order, and see for yourself.

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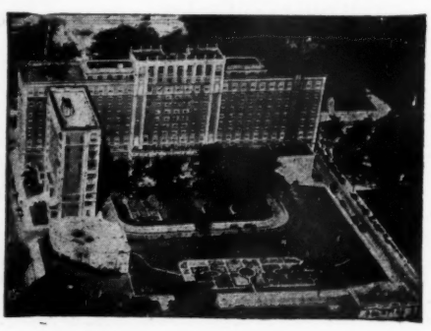
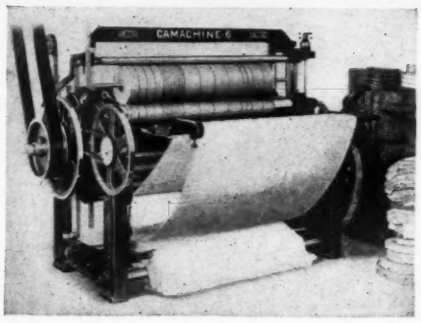


HOW TO CUT COSTS IN SLITTING BURLAP FOR INNER-SPRING POCKETS



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Recommendations will be made without obligation. Write

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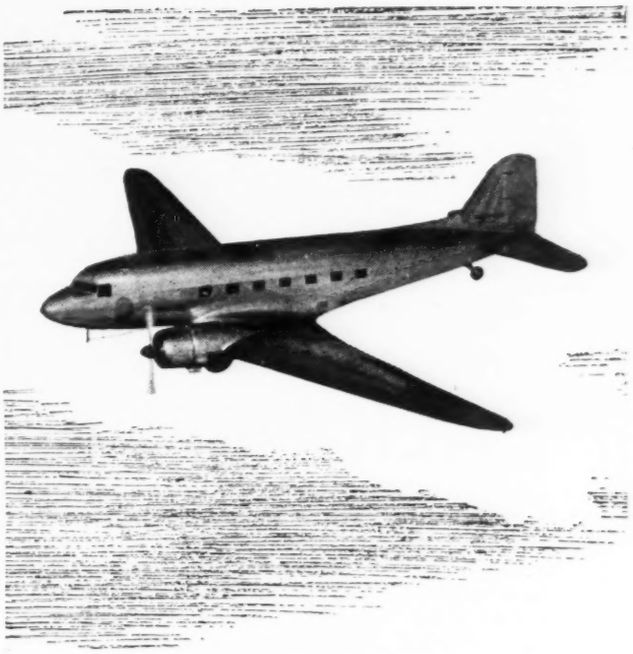

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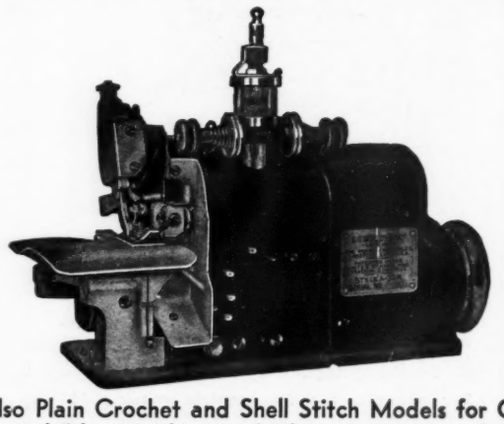

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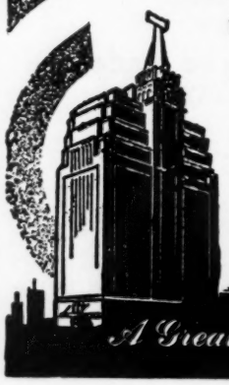

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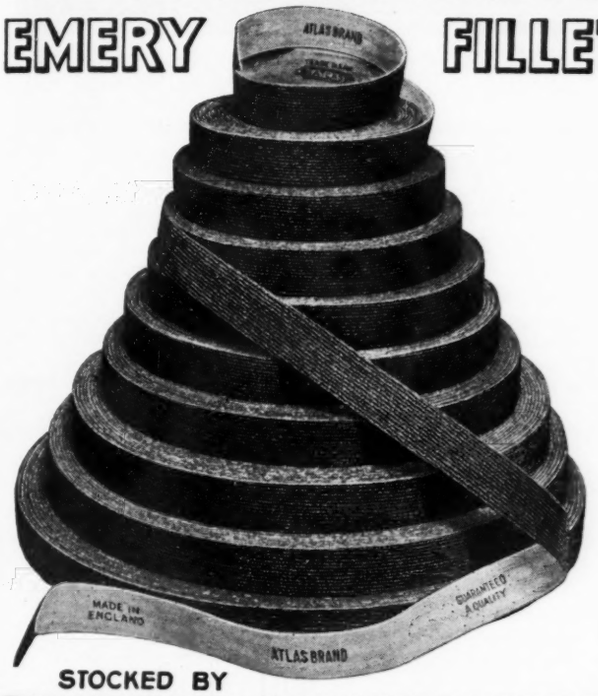

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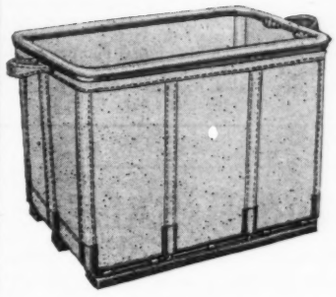

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Built to exacting quality standards, of finer materials, Dandux Baskets, Hampers and Trucks have earned recognition and preference in the textile field, because their superior construction assures longer life, greater durability and service — Yet, they cost no more than the ordinary.

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2 Lummus Cotton Mill Gyrator Cleaning, Blending and Distributing Machines, complete with metal cotton slides chutes and hoppers, steel supports, and 4—30" x 3½" x 1 7/16" Flat Face Pulleys. (4 G. E. Motors —550 V, 3 phase, 60 cycle; 3—2 H.P., and 1—3 H.P.) For feeding 3 pickers each.

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4 Lummus Welded Type Steel Motor Bases with 4—3.6" P.D. Sheaves with 3 Grooves and 12—A-112 Goodrich "V" Belts.

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ON MILL FLOOR

PACIFIC MILLS

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Or
Columbia Div., Columbia, S. C.

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Two cotton textile mills, either separately or together, as going concerns, one of which is located at Jasper in Walker County, Alabama, and the other at Russellville in Franklin County, Alabama. The Jasper Mill has 12,896 spindles, all long draft, 182—40" Draper looms and 168—36" Draper looms, together with modernized preparatory machinery. The Russellville Mill has 13,344 spindles, 200—40" Draper looms and 86—36" Draper looms, 100 of which are dobby looms and 186 of which are plain looms, together with the necessary preparatory machinery.

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Experienced man on narrow fabrics. Able to take care of looms if necessary. Must be able to set up and read construction specifications on webbing. Write full details in first letter. Box 595, care COTTON, Grant Bldg.

OVERSEER OF SPINNING

Overseer of spinning desires position, 13 years' experience in the mill on coarse yarns from 4's to 130's, single and ply. A-1 fixer on Whitin, Saco-Lowell and H. & B. Spinning Frames, also on Spoolers and Twisters. I. C. S. Graduate and good manager of help. Will go anywhere, but would prefer North Carolina, or South Carolina. Address Box 593, care COTTON, Grant Bldg., Atlanta, Ga.

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Four experienced Card Grinders. Guaranteed pay 60c per hour. Mills now running 6 days per week, 8 hours per day three shifts. Additional compensation through bonuses.

Granite Falls Manufacturing Co.
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Assistant superintendent in good Alabama or Georgia mill by practical young man, trained in some of the best mills in this section. Some Georgia Tech training, willing and capable of carrying full responsibility of job. Major experience in spinning. Address Box 598, COTTON, Grant Bldg., Atlanta, Ga.

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A practical spinner around 45 years of age for overseer of spinning in yarn mill located in West. Give full particulars in first letter. Address Box 597, COTTON, Grant Bldg., Atlanta, Ga.

POSITION WANTED

Foreman of carding. Have finished I. C. S. Carding and spinning course; also studied M. C. Swain card room calculations. Familiar with processing rayon staple fiber. Address Box 599, COTTON, Grant Bldg., Atlanta, Ga.

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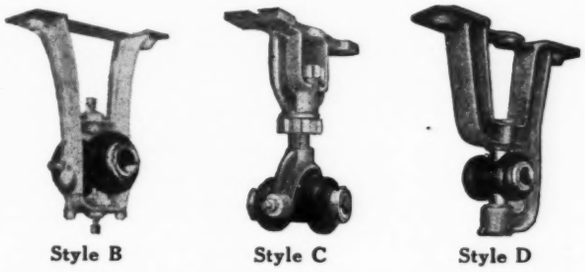

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. . . are as fine as 45 years of skilled workmanship and constant research can make them. Help us to serve you promptly . . . send your highest priority rating when ordering Dary Travelers.

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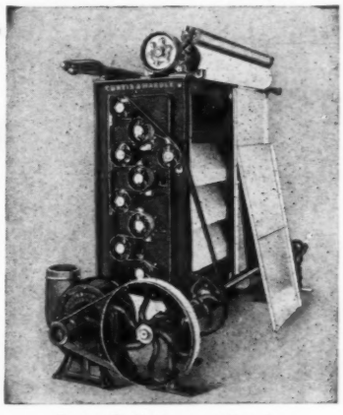

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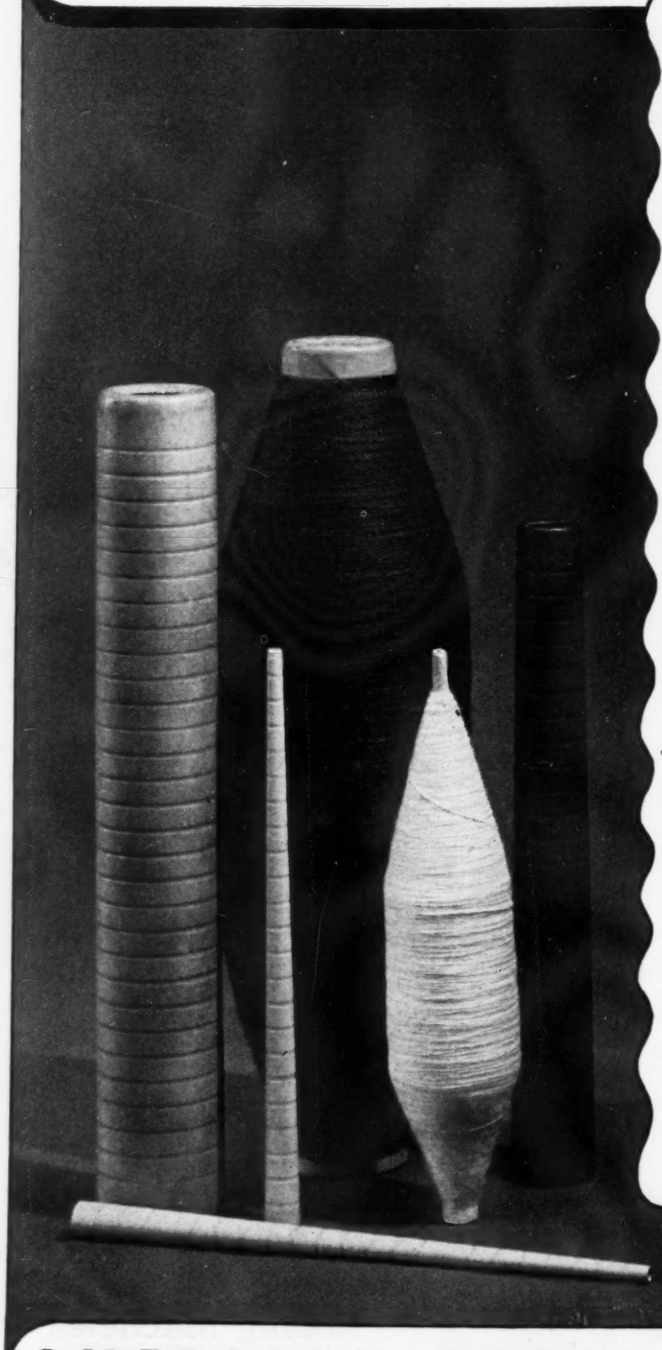

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One of Many Places Where They Promote Quality and Economy

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Safety
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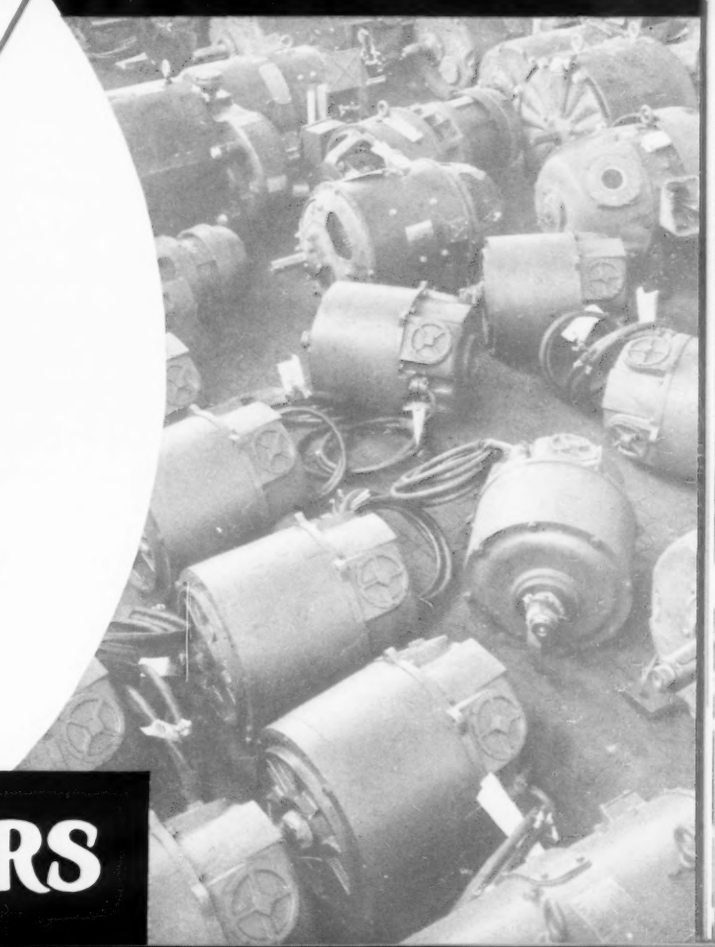

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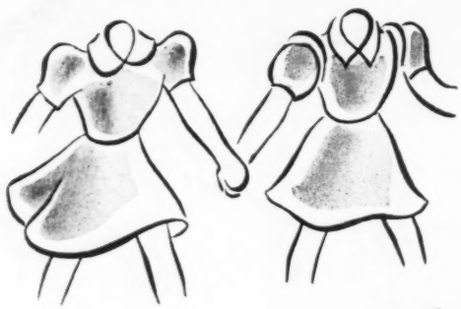

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—BUT THIS LITTLE GARMENT WENT TO TOWN

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